

636541

REPORT NUMBER: 214-CAL-03-06

**SAFETY COMPLIANCE TESTING FOR FMVSS 214
SIDE IMPACT PROTECTION
INDICANT**

**MITSUBISHI MOTORS CORPORATION
2003 MITSUBISHI OUTLANDER
MPV**

NHTSA NUMBER: C35603

VERIDIAN ENGINEERING TEST NUMBER: 8675-P214-06

**VERIDIAN ENGINEERING
TRANSPORTATION SCIENCES CENTER
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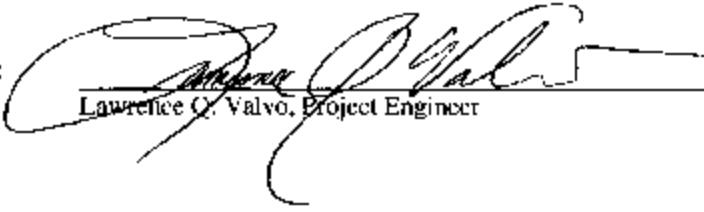
April 22, 2003

FINAL REPORT

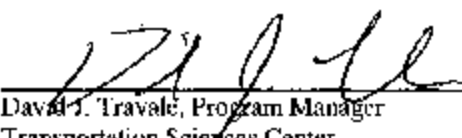
**U. S. DEPARTMENT OF TRANSPORTATION
National Highway Traffic Safety Administration
Safety Assurance
Office of Vehicle Safety Compliance
400 Seventh Street, SW
Room 6111 (NVS-220)
Washington, DC 20590**

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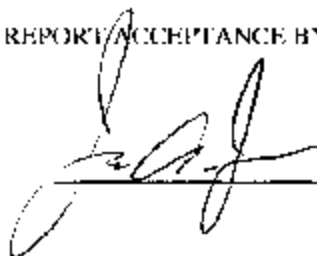

David J. Travale, Program Manager
Transportation Sciences Center

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| 15. Supplementary Notes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16. Abstract <p>A 55/28 kph 90° Side Impact (Moving Deformable Barrier) Indicant Test was conducted on the subject Mitsubishi Outlander MPV. This test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 26, 2001). This test was conducted at the Veridian Engineering Crash Test Facility in Buffalo, New York, on April 22, 2003.</p> <p>The impact velocity of the Moving Deformable Barrier (MDB) was 61.80 kph, and the ambient temperature at the struck (driver's) side of the target vehicle at the time of impact was 20.6°C. The target vehicle post-test maximum crush was 276 mm at level 3.</p> <p>The test or target vehicle's performance is given below:</p> <table border="0"> <thead> <tr> <th></th> <th align="center"><u>Front SID H3</u></th> <th></th> <th align="center"><u>Rear SID H3</u></th> </tr> </thead> <tbody> <tr> <td>Left Upper Rib Acceleration:</td> <td align="center">40</td> <td align="center">g's</td> <td align="center">42</td> <td align="center">g's</td> </tr> <tr> <td>Left Lower Rib Acceleration:</td> <td align="center">42</td> <td align="center">g's</td> <td align="center">59</td> <td align="center">g's</td> </tr> <tr> <td>Lower Spine Acceleration:</td> <td align="center">65</td> <td align="center">g's</td> <td align="center">62</td> <td align="center">g's</td> </tr> <tr> <td>Thoracic Trauma Index (TTI):</td> <td align="center">53</td> <td align="center">g's</td> <td align="center">60</td> <td align="center">g's</td> </tr> <tr> <td>Pelvis Acceleration (PEV):</td> <td align="center">69</td> <td align="center">g's</td> <td align="center">68</td> <td align="center">g's</td> </tr> </tbody> </table> <p>The two doors on the struck side of the vehicle did not separate from the body at the hinges or latches and the opposite doors did not open during the side impact event.</p> | | | | | <u>Front SID H3</u> | | <u>Rear SID H3</u> | Left Upper Rib Acceleration: | 40 | g's | 42 | g's | Left Lower Rib Acceleration: | 42 | g's | 59 | g's | Lower Spine Acceleration: | 65 | g's | 62 | g's | Thoracic Trauma Index (TTI): | 53 | g's | 60 | g's | Pelvis Acceleration (PEV): | 69 | g's | 68 | g's |
| | <u>Front SID H3</u> | | <u>Rear SID H3</u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Left Upper Rib Acceleration: | 40 | g's | 42 | g's | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Left Lower Rib Acceleration: | 42 | g's | 59 | g's | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lower Spine Acceleration: | 65 | g's | 62 | g's | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Thoracic Trauma Index (TTI): | 53 | g's | 60 | g's | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pelvis Acceleration (PEV): | 69 | g's | 68 | g's | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17. Key Words Compliance Testing Side Impact Protection FMVSS 214 Side Impact Dummy (SID H3) | | 18. Distribution Statement <u>Copies of this report are available from:</u> National Highway Traffic Safety Administration Technical Reference Division (TIS) Room 5108 (NPO-230) 400 Seventh St., S.W. Washington, D.C. 20590 Telephone No. (202) 366-4946 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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SECTION 1

PURPOSE AND TEST PROCEDURE

This side impact test is part of the FMVSS 214 Side Impact Protection Compliance Test Program sponsored by the National Highway Traffic Safety Administration (NHTSA) under Contract No. DTNH22-02-D-01114. The purpose of this indicant test was to evaluate side impact protection in a 2003 Mitsubishi Outlander MPV when tested at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (TP-214D-06, dated July 26, 2001).

SECTION 2

SUMMARY OF SIDE IMPACT TEST

This Side Impact Protection Indicant Test was performed at the New Car Assessment Program (NCAP) target test velocity of 62.0 kph, which is 8 kph faster than the target velocity required by the Office of Vehicle Safety Compliance's Laboratory Test Procedure (FP-214D-06, dated July 26, 2001).

A 2003 Mitsubishi Outlander MPV was impacted on the left or driver's side by a Moving Deformable Barrier (MDB) which was moving forward in a 27° crabbed position to the monorail at a velocity of 61.80 kph (38.4 mph). The target vehicle was stationary and was positioned at an angle of 63° to the line of forward motion. The side impact test was conducted by the Veridian Engineering Transportation Sciences Center in Buffalo, New York on April 22, 2003. Pre- and post-test photographs of the test vehicle, the moving deformable barrier (MDB), and the Side Impact Hybrid III Dummies (SID H3s) are included in Appendix A.

Two restrained Side Impact Hybrid III Dummies (SID H3s) were placed in the driver (Pos. #1) and left rear (Pos. #4) designated seating positions according to the instructions specified in the OCWS Side Impact Laboratory Test Procedure which is dated July, 1997. The side impact test was documented by one real-time camera and 9 high-speed cameras. Camera locations and other pertinent camera information are included in this report.

The SID H3s were instrumented with the following accelerometers:

1. Left Upper Rib (LUR) uniaxial and redundant accelerometer (Y-direction)
2. Left Lower Rib (LLR) uniaxial and redundant accelerometer (Y-direction)
3. Lower Thoracic Spine (T₁₂) uniaxial and redundant accelerometer (Y-direction)
4. Pelvic (PEV) section uniaxial and redundant accelerometer (Y-direction)
5. Nine Axis Array Heads (NAAH)
6. Head triaxial accelerometers (X-, Y- and Z-direction)
7. Upper neck force and moment (X-, Y and Z-direction) load cells

A summary of the Side Impact Hybrid III Dummy (SID H3) configuration and verification test data can be found in Appendix C. A total of 72 channels of data were recorded. Appendix B contains the vehicle, MDB and dummy response data traces.

The following table summarizes the results of the test.

| Injury Criteria | Front SID H3 | Rear SID H3 |
|-----------------|--------------|-------------|
| TH1 (g) | 53 | 60 |
| PEV (g) | 69 | 68 |

AIR BAG DEPLOYMENT STATUS

| | DRIVER | FRONT PASSENGER | REAR PASSENGER |
|------------------|--------|-----------------|----------------|
| Front Air Bag | No | No | - |
| Knee Bolster Bag | - | - | - |
| Side Air Bag | - | - | - |
| Side Curtain Bag | - | - | - |

SECTION 3

SUMMARY OF TEST RESULTS

DATA SHEET 1

GENERAL TEST AND VEHICLE PARAMETER DATA

TEST VEHICLE INFORMATION:

Year/Make/Model/Body Style: 2003 Mitsubishi Outlander MPV
 Vehicle Body Color: _____ VIN: JA41X31G43U036058
 Vehicle NHTSA No.: C35603 Month & Year of Manufacture: Sep. 2002
 Engine Data: 4 Cylinders; - CID; 2.4 Liters; - cc
 Engine Placement: - Longitudinal; or X Lateral
 Transmission: 4 Speed; - Manual; X Automatic; X Overdrive
 Final Drive: - Rear Wheel Drive; X Front Wheel Drive; - Four Wheel Drive
 Odometer Reading 60 km
 Supplemental Airbag Restraints:
 Front Occupant: X Frontal; - Knee; - Side; - Curtain
 Rear Occupant: X Frontal; - Knee; - Side; - Curtain
 Options: X A/C; X Power Steering; X Power Brakes; X Power Windows

DATA FROM TIRE PLACARD

Recommended Tire Size: P225/60R16
 *Recommended Cold Tire Pressure: 200 kpa FRONT; 200 kpa REAR

DATA FROM TIRE SIDEWALL:

Size of Tires on Test Vehicle: P225/60R16; Manufacturer: Yokohama
 Tire Pressure with Maximum Capacity Vehicle Load: Front: 300 kPa; Rear: 300 kPa
 Treadwear: 180; Traction: B; Temperature: A

VEHICLE CAPACITY DATA:

Number of Occupants: 2 Front; 3 Rear; - 3rd Seat; 5 Total
 Type of Front Seats: X Bucket; - Bench; - Split Bench;
 Type of Rear Seats: - Bucket; - Bench; X Split Bench; - Contoured
 Type of Front Seat Back: - Fixed; X Adjustable with X Lever or - Knob
 Type of Front Seat Back: - Fixed; X Adjustable with X Lever or - Knob
 Vehicle Max Capacity Loading = 375 kg (A)
 No. of Occupants x 68.04 kg. = 340.2 kg (B)
 Vehicle Cargo Capacity = 34.8 kg (A-B)

TEST VEHICLE DELIVERED WEIGHT WITH MAXIMUM FLUIDS:

Left Front = 440.5 kg Left Rear = 305.0 kg
 Right Front = 441.5 kg Right Rear = 292.0 kg
 TOTAL FRONT = 882.0 kg TOTAL REAR = 597.0 kg
 % of Total Weight = 59.6% % % of Total Weight = 40.4 %
 TOTAL WEIGHT = 1479.0 kg

* Tire pressure used in test.

DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603

CALCULATION OF VEHICLE'S TARGET TEST WEIGHT:

| | | | |
|--|---|---------------|------------|
| Total Test Vehicle Delivered Weight with Max. Fluids | = | <u>1479.0</u> | kg (A) |
| Maximum Cargo Carrying Capacity of Test Vehicle | - | <u>34.8</u> | kg (B) |
| Weight of instrumented SID H3 Dummies (2 X 81.2 kg) | = | <u>162.4</u> | kg (C) |
| TEST VEHICLE TARGET WEIGHT: | = | <u>1676.2</u> | kg (A+B+C) |

FULLY LOADED TEST VEHICLE (UDVW + 2 SID H3(s) + CARGO):

| | | | | | | | |
|--------------------|---|---------------|----|-------------------|---|--------------|----|
| Left Front | = | <u>490.5</u> | kg | Left Rear | = | <u>397.0</u> | kg |
| Right Front | = | <u>443.5</u> | kg | Right Rear | = | <u>350.0</u> | kg |
| TOTAL FRONT | = | <u>934.0</u> | kg | TOTAL REAR | = | <u>747.0</u> | kg |
| % of Total Weight | = | <u>55.6%</u> | % | % of Total Weight | = | <u>44.4%</u> | % |
| TOTAL TEST WEIGHT= | | <u>1681.0</u> | kg | | | | |

AS TESTED WEIGHT OF TEST VEHICLE (1 OR 2 SID H3(s) + CARGO + EQUIPMENT & INSTRUMENTATION):

| | | | | | | | |
|--------------------|---|---------------|----|-------------------|---|--------------|----|
| Left Front | = | <u>483.5</u> | kg | Left Rear | = | <u>387.5</u> | kg |
| Right Front | = | <u>454.5</u> | kg | Right Rear | = | <u>345.0</u> | kg |
| TOTAL FRONT | = | <u>938.0</u> | kg | TOTAL REAR | = | <u>732.5</u> | kg |
| % of Total Weight | = | <u>56.2%</u> | % | % of Total Weight | = | <u>43.8%</u> | % |
| TOTAL TEST WEIGHT= | | <u>1670.5</u> | kg | | | | |

TEST VEHICLE ATTITUDE (all dimensions in millimeters):

AS DELIVERED:

| | | | | | | | |
|------------|------------|-------------|------------|-----------|------------|------------|------------|
| Left Front | <u>801</u> | Right Front | <u>800</u> | Left Rear | <u>800</u> | Right Rear | <u>804</u> |
|------------|------------|-------------|------------|-----------|------------|------------|------------|

FULLY LOADED:

| | | | | | | | |
|------------|------------|-------------|------------|-----------|------------|------------|------------|
| Left Front | <u>788</u> | Right Front | <u>795</u> | Left Rear | <u>758</u> | Right Rear | <u>773</u> |
|------------|------------|-------------|------------|-----------|------------|------------|------------|

READY FOR TEST:

| | | | | | | | |
|------------|------------|-------------|------------|-----------|------------|------------|------------|
| Left Front | <u>789</u> | Right Front | <u>796</u> | Left Rear | <u>766</u> | Right Rear | <u>773</u> |
|------------|------------|-------------|------------|-----------|------------|------------|------------|

Test Vehicle Wheelbase: 2628 millimeters

C.G. = 1152 millimeters rearward of front wheel centerline

TOTAL VEHICLE LENGTH:

Right Side = 4564 millimeters

Left Side = 4424 millimeters

Centerline = 4424 millimeters

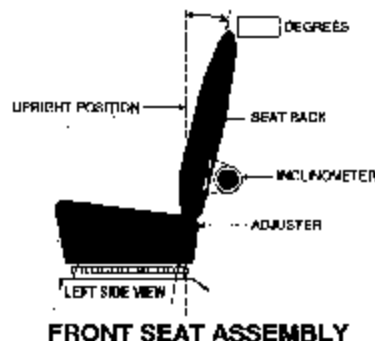
DATA SHEET 1 (continued)

GENERAL TEST VEHICLE PARAMETER DATA

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603

Nominal Design Riding Position for adjustable driver and passenger seat backs. Please describe how to position the inclinometer to measure the seat back angle. Include description of the location of the adjustment latch/detent, if applicable.



FRONT SEAT CUSHION PLACEMENT: Place seat cushion in full down position. Where the forward-most position is detent 0, place seat cushion in detent 11 (mid-position).

Total Length of Adjustment Travel: 220 millimeters

Total Number of Adjustment Positions or Detents: 23

FRONT SEAT BACK ADJUSTMENT POSITION: Where the most-upright position is detent 0, place seatback in detent 3.

Seat Back Torso Angle: 17 degrees

SECOND POSITION SEAT:

Total Length of Fore/Aft Adjustment Travel: 0 millimeters

Seat Back Adjustment Position: Where the most upright position is detent 0, place seatback in detent 2. At the request of the COTR, the seat back was repositioned to detent 4 prior to the test so that the SID pelvic angle as would meet the test specification.

ADJUSTABLE STEERING COLUMN POSITION: Mid-position

WINDOW POSITIONS: Left Front: Closed Left Rear: Closed

Right Front: Open Right Rear: Removed

Note: Windows will be in closed position on struck side of test vehicle and in open position on opposite side.

AMOUNT OF STODDARD SOLVENT IN FUEL TANK:

59.5 liters (Fuel Tank Usable Capacity)

54.9 liters used for test (92%-94% of Fuel Tank Usable Capacity)

LOCATION OF IMPACT POINT ON TEST VEHICLE SIDE TO BE IMPACTED:

Wheelbase = 2628 millimeters

Impact Point is 374 millimeters rearward of front axle centerline

(which is 940 millimeters forward of the wheelbase midpoint)

Actual Impact Point is 372 millimeters rearward of front axle centerline

DATA SHEET 2

TEST VEHICLE SUMMARY OF RESULTS

VEHICLE IDENTIFICATION:

Vehicle Year/Make/Model: 2003 Mitsubishi Outlander

Body Style: MPV

VIN: JA4LX31G43U036058

NHTSA No.: C35603

Test Date: April 22, 2003

Overall Length = 4564 millimeters; Overall Width = 1740 millimeters

VEHICLE TEST WEIGHT (Pre-Test):

Left Front = 483.5 kg Left Rear = 387.5 kg

Right Front = 454.5 kg Right Rear = 345.0 kg

TOTAL FRONT = 938.0 kg TOTAL REAR = 732.5 kg

TOTAL VEHICLE WEIGHT 1670.5 kg

Wheelbase = 2628 millimeters

Longitudinal C.G. from Center of Front Axle = 1152 millimeters

Impact Angle with Respect to Impactor = 90 degrees

ACTUAL IMPACT POINT

Actual Impact Point is 2 mm forward of nominal impact ref. line (Lateral)

Actual Impact Point is 9 mm below nominal impact point (Vertical)

MAXIMUM EXTERIOR STATIC CRUSH:

1. LEVEL 1 (291 mm above ground) = 144 millimeters

2. LEVEL 2 (611 mm above ground) = 270 millimeters

3. LEVEL 3 (739 mm above ground) = 276 millimeters

4. LEVEL 4 (963 mm above ground) = 186 millimeters

5. LEVEL 5 (1511 mm above ground) = 33 millimeters

Maximum Post-Test Intrusion = 276 millimeters

OCCUPANTS:

Front Passenger:

Rear Passenger:

Dummy Identification SID H3/015

SID H3/016

Restraints Used 3-point seat belt

3 point seat belt

INSTRUMENTATION:

Number of Vehicle Data Channels: = 21

Number of Cameras: Onboard = 3

Offboard = 7

TOTAL = 10

DATA SHEET 3

MOVING DEFORMABLE BARRIER (MDB) SUMMARY

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603

MDB FACE MANUFACTURER AND SERIAL NUMBER:

Plascore: 36C1202-3; 23B1102

POSITION OF IMPACT (MDB) ON MONORAIL:

Crabbed 27° to left

MDB DETAILS:

| | | | |
|---|---|-------------|-------------|
| Overall Width of Framework Carriage | = | <u>1250</u> | millimeters |
| Overall Length of MDB (incl. honeycomb impact face) | = | <u>4120</u> | millimeters |
| Wheelbase of Framework Carriage | = | <u>2590</u> | millimeters |
| Tread of Framework Carriage (Front & Rear) | = | <u>1875</u> | millimeters |
| C.G. Location Rearward of Front Axle | = | <u>1104</u> | millimeters |

MDB WEIGHT:

| | | | | | | | |
|--|---|---------------|---------|--------------|---|--------------|----|
| Left Front | = | <u>409.5</u> | kg | Left Rear | = | <u>281.5</u> | kg |
| Right Front | = | <u>372.5</u> | kg | Right Rear | = | <u>299.0</u> | kg |
| TOTAL FRONT = | | <u>782.0</u> | kg | TOTAL REAR = | | <u>580.5</u> | kg |
| TOTAL MDB WEIGHT = | | <u>1362.5</u> | kg | | | | |
| Impact Angle (MDB C/L to Target Vehicle C/L) | = | <u>90</u> | degrees | | | | |
| Impact Speed | = | <u>61.80</u> | kph | | | | |

MAXIMUM STATIC CRUSH OF HONEYCOMB IMPACT FACE:

| | | | |
|------------------------------------|---|------------|-------------|
| 1. Row A at Center of Bumper Level | = | <u>209</u> | millimeters |
| 2. Row B at Top of Bumper Level | = | <u>168</u> | millimeters |
| 3. Row C at Mid Level | = | <u>139</u> | millimeters |
| 4. Row D at Top of Stack Level | = | <u>179</u> | millimeters |

INSTRUMENTATION:

| | | |
|-----------------------------|---|----------|
| Number of MDB Data Channels | = | <u>5</u> |
|-----------------------------|---|----------|

DATA SHEET 4**POST-TEST OBSERVATIONS**Vehicle: 2003 Mitsubishi Outlander MPVNHTSA No. C35603**TEST DUMMY INFORMATION AND CONTACT POINTS:**

| DESCRIPTION | FRONT SEAT | REAR SEAT |
|----------------------|---|---|
| ATD Type/Serial No. | SID H3/015 | SID H3/016 |
| Head Contact: | Side of head to side window, back of head to head restraint | Back and top of head to upper C-pillar trim |
| Upper Torso Contact: | Left arm to door trim above arm rest | Left arm to door trim above arm rest |
| Lower Torso Contact: | Pelvis to door trim below arm rest | Pelvis to door trim below arm rest |
| Left Knee Contact: | Left knee to door trim above speaker | Left knee to door trim above speaker |
| Right Knee Contact: | Right knee to left knee | Right knee to left knee |

POST TEST DOOR OPENING AND SEAT TRACK INFORMATION

| DESCRIPTION | FRONT | REAR |
|-------------------|--|-------------------------------|
| Left Side Doors | Closed / Latched / Inoperable | Closed / Latched / Inoperable |
| Right Side Doors | Closed / Latched / Operable | Closed / Latched / Operable |
| Hatch/Other Door | | Closed / Latched / Operable |
| Seat Movement | Seat cushion was deformed against center console | None |
| Seat Back Failure | None | None |

POST TEST STRUCTURAL OBSERVATIONS

| CRITICAL AREAS OF PERFORMANCE | |
|-------------------------------|---|
| Pillar Performance | No visible tears or separations |
| Sill Separation | None |
| Windshield Damage | None |
| Window Damage | Left rear window shattered during the event |
| Other Notable Effects | Left front tire deflated during the event |

AIR BAG DEPLOYMENT STATUS:

| | DRIVER | FRONT PASSENGER | REAR PASSENGER |
|------------------|--------|-----------------|----------------|
| Front Air Bag | No | No | - |
| Knee Bolster Bag | - | - | - |
| Side Air Bag | - | - | - |
| Side Curtain Bag | - | - | - |

MDB LEFT EDGE IMPACT DATA

| Measured Parameter | Units | Requirement | Value |
|--------------------|-------|-------------|---------------------|
| Horizontal Offset | mm | ± 50 mm | 2 forward of target |
| Vertical Offset | mm | ± 20 mm | 9 below target |

SECTION 4

OCCUPANT AND VEHICLE INFORMATION

DATA SHEET 5

SID H3 INSTRUMENTATION DATA

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603

| | Front Dummy ID# 015 | | | | Rear Dummy ID# 016 | | | | |
|------------------------|---------------------|-------------|----------------|-------------|--------------------|-------------|----------------|-------------|--|
| | Pos. Direction | | Neg. Direction | | Pos. Direction | | Neg. Direction | | |
| | Max (g) | Time (msec) | Max (g) | Time (msec) | Max (g) | Time (msec) | Max (g) | Time (msec) | |
| HEAD ACCELERATIONS: | | | | | | | | | |
| NAAH X Arm Y | 50.0 | 68.5 | -5.9 | 45.1 | 15.3 | 84.5 | -4.6 | 43.6 | |
| NAAH X Arm Z | 50.5 | 62.4 | -6.2 | 90.5 | 44.6 | 84.8 | -22.8 | 61.5 | |
| NAAH Y Arm X | 2.0 | 25.8 | -22.5 | 61.1 | 57.2 | 192.5 | -37.6 | 50.4 | |
| NAAH Y Arm Z | 48.6 | 61.2 | -4.2 | 84.8 | 58.1 | 84.8 | -19.0 | 67.8 | |
| NAAH Z Arm X | 6.1 | 51.2 | -45.5 | 67.5 | 86.3 | 192.5 | -30.7 | 90.4 | |
| NAAH Z Arm Y | 99.6 | 68.4 | -28.1 | 52.1 | 82.8 | 46.6 | -28.3 | 62.5 | |
| CG Longitudinal X | 1.8 | 26.6 | -16.2 | 72.4 | 66.1 | 192.6 | -16.0 | 75.6 | |
| CG Lateral Y | 54.9 | 68.5 | -4.3 | 40.6 | 39.5 | 46.6 | -6.7 | 70.8 | |
| CG Vertical Z | 53.5 | 67.0 | -0.8 | 29.4 | 52.8 | 85.0 | -28.2 | 62.1 | |
| CG Resultant R | 71.2 | 68.4 | - | - | 67.1 | 192.6 | - | - | |
| HIC | 303.8 | | | | 129.2 | | | | |
| NECK FORCES: | | | | | | | | | |
| Longitudinal X | 16.8 | 36.7 | -575.5 | 76.9 | 416.1 | 61.6 | -587.9 | 77.5 | |
| Lateral Y | 702.6 | 74.2 | -204.7 | 42.7 | 329.9 | 119.3 | -509.7 | 50.3 | |
| Vertical Z | 1980.8 | 65.7 | -22.0 | 29.5 | 2199.6 | 84.9 | -1185.6 | 62.5 | |
| Resultant R | 2058.0 | 65.7 | 0.1 | -14.5 | 2255.7 | 84.9 | - | - | |
| NECK MOMENTS: | | | | | | | | | |
| X | 49.2 | 82.7 | -55.4 | 50.9 | 20.8 | 128.3 | -82.8 | 58.8 | |
| Y | 42.5 | 90.2 | -31.0 | 54.5 | 39.4 | 94.3 | -78.3 | 69.1 | |
| Z | 24.6 | 87.3 | -7.9 | 51.2 | 47.5 | 78.4 | -8.8 | 125.6 | |
| Resultant R | 62.0 | 52.6 | 0.0 | -14.9 | 90.0 | 68.6 | - | - | |
| RIB ACCELERATIONS: | | | | | | | | | |
| Upper Rib Lateral Y | 39.9 | 46.3 | -5.5 | 106.3 | 41.9 | 46.3 | -6.5 | 117.5 | |
| Upper Rib Lateral Y(R) | 40.7 | 46.3 | -5.6 | 106.9 | 41.0 | 46.3 | -6.5 | 117.5 | |
| Lower Rib Lateral Y | 42.0 | 44.4 | -6.1 | 106.2 | 58.7 | 45.6 | -4.9 | 126.3 | |
| Lower Rib Lateral Y(R) | 42.0 | 44.4 | -5.9 | 106.2 | 60.0 | 45.6 | -5.0 | 126.2 | |
| SPINE ACCELERATIONS: | | | | | | | | | |
| Lower Lateral Y | 64.8 | 40.6 | -5.4 | 58.8 | 61.5 | 46.3 | -6.0 | 66.8 | |
| Lower Lateral Y(R) | 64.5 | 40.7 | -5.7 | 58.8 | 60.8 | 46.8 | -5.4 | 66.9 | |
| PELVIC ACCELERATIONS: | | | | | | | | | |
| Lateral Y | 68.9 | 35.0 | -15.3 | 56.9 | 68.0 | 36.2 | -9.6 | 73.8 | |
| Lateral Y(R) | 70.9 | 35.0 | -15.4 | 56.9 | 66.4 | 36.2 | -9.6 | 73.7 | |

REFERENCE: Positive Direction: Longitudinal (X) = forward; Lateral (Y) = to right; Vertical (Z) = down

Note: Rib, Spine and Pelvis data has been FIR filtered, Y(R) denotes redundant Y direction accelerometer.

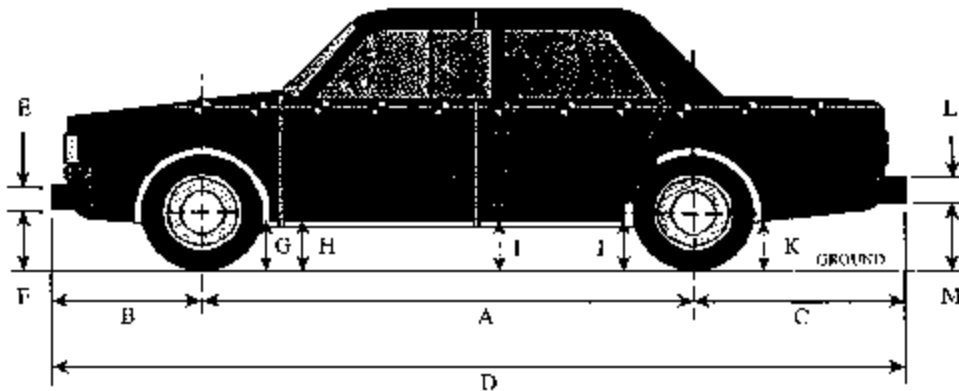
Head Accelerations and Neck Forces are filtered at SAE Class 1000, Neck Moments are filtered at SAE Class 600.

DATA SHEET 6

VEHICLE SIDE MEASUREMENTS

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603



LEFT SIDE VIEW

NOTE: all dimensions are in millimeters with tolerance of ± 3 mm

| | PRE-TEST (as delivered) | PRE-TEST (as tested) | POST-TEST (as tested) | Δ CHANGE |
|----|----------------------------|-------------------------|--------------------------|----------|
| A | 2630 | 2628 | 2625 | -3 |
| B | 948 | 942 | 950 | 8 |
| C | 986 | 994 | 976 | -18 |
| D | 4564 | 4564 | 4551 | -13 |
| E | 357 | - | 357 | 0 |
| F | 267 | 268 | 227 | -41 |
| G | 241 | 224 | 255 | 31 |
| H | 258 | 240 | 252 | 12 |
| I | 278 | 247 | 251 | 4 |
| J1 | 245 | 211 | 261 | 50 |
| J2 | 298 | 260 | 276 | 16 |
| K | 297 | 251 | 273 | 22 |
| L | 310 | - | 310 | 0 |
| M | 385 | 337 | 365 | 28 |
| N | 700 | - | 669 | -31 |
| O | 740 | - | 733 | -7 |
| P | 1279 | - | 1223 | -56 |
| Q | 459 | - | 458 | -1 |
| R | 4424 | - | 4398 | -26 |
| S | 4424 | - | 4425 | 1 |
| T | 1740 | - | 1502 | -238 |

D = Length at Centerline

E&L = Bumper Thickness

R = Right Side Length

S = Left Side Length

T = Width at B-Pillar

J1 = To Pinch Weld

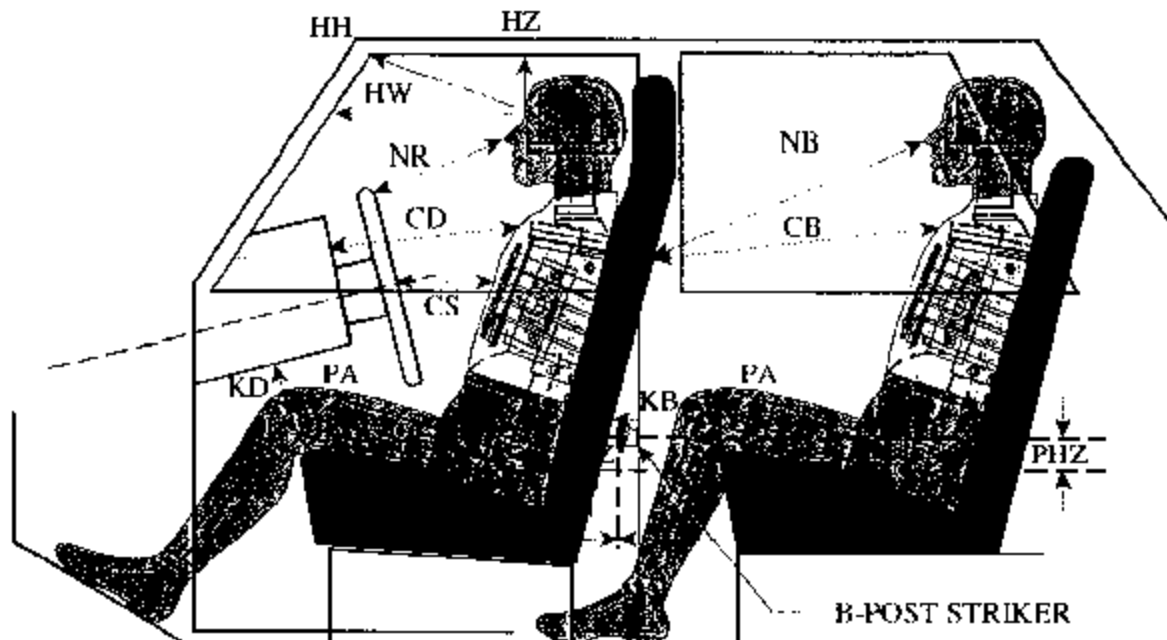
J2 = To Sill

DATA SHEET 7

SID H3 LONGITUDINAL CLEARANCE DIMENSIONS

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603



LEFT SIDE VIEW

NOTE: 2-DOOR VEHICLE SHOWN.
REAR DUMMY PHX & PHZ
MEASUREMENTS FOR A 4-DOOR
VEHICLE WOULD USE THE C-POST
STRIKER AS A REFERENCE POINT

NOTE: All dimensions are in millimeters with tolerance of ± 3 mm

| | DRIVER ID# 015 | LEFT REAR PASS. ID# 016 |
|---------------------|----------------|-------------------------|
| HH | 388 | N/A |
| HW | 602 | N/A |
| HZ | 162 | 192 |
| NR/NB | 389 | 591 |
| CD/CB | 546 | 556 |
| CS | 260 | N/A |
| KDL(KDA°)/KBL(KDA°) | 162 / (27 °) | 245 / (20 °) |
| KDR(KBA°)/KBR(KBA°) | 152 / (27 °) | 245 / (20 °) |
| PA° | 24.8° | 23.6° |
| PHX | 215 | 219 |
| PHZ | 171 | 248 |

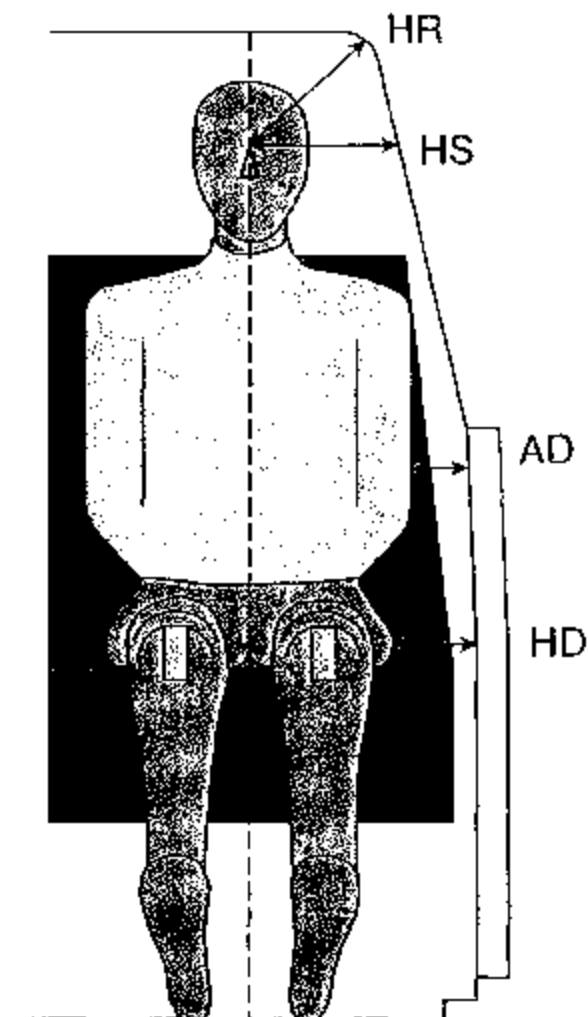
Note: 2-door vehicle shown. Rear dummy PHX & PHZ measurements for 4-door vehicle would use the C-post striker as a reference point.

DATA SHEET 8

SID H3 LATERAL CLEARANCE DIMENSIONS

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603



NOTE: All dimensions are in millimeters with tolerance of ± 3 mm

| | DRIVER ID # 015 | | LEFT REAR PASS. ID # 016 | |
|-----|-----------------|------------|--------------------------|-----------|
| HR | 195 | | 202 | |
| HS | 311 | | 317 | |
| AD* | LOWER: 116 | UPPER: 113 | LOWER: 103 | UPPER: 95 |
| HD | 166 | | 146 | |

* Lower measurement is taken laterally at the center of the lower rib accelerometer height from the SID H3 arm segment to the closest part of the vehicle side.

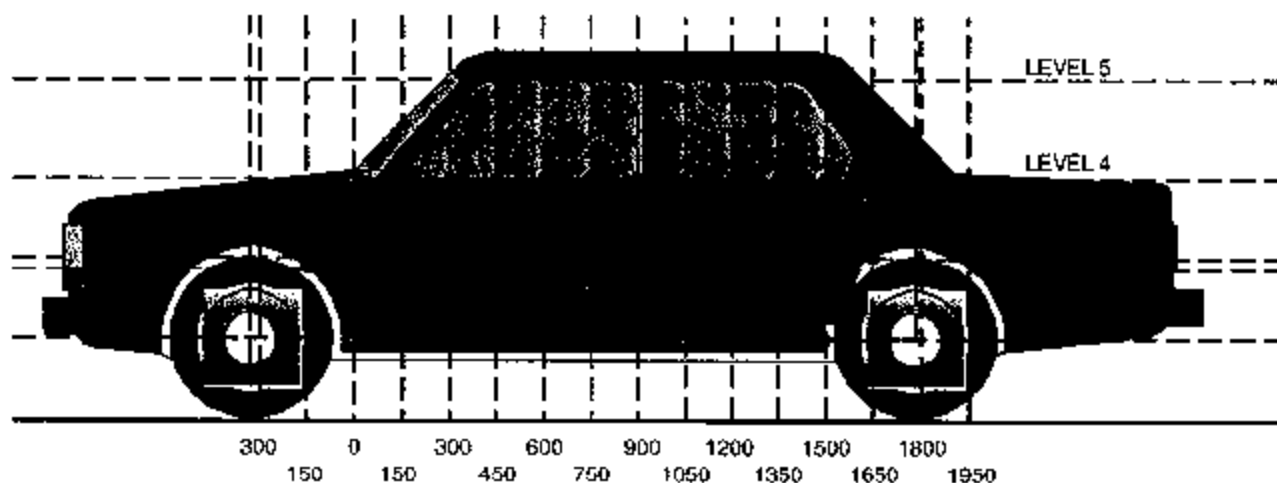
Upper measurement is taken laterally at the center of the upper rib accelerometer height from the SID H3 arm segment to the closest part of the vehicle side.

DATA SHEET 9

VEHICLE SIDE MEASUREMENTS

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603



LEFT SIDE VIEW

NOTE: All measurements are in millimeters (mm)

LEVEL 5 - WINDOW TOP

LEVEL 4 - WINDOW SILL

LEVEL 3 - MID-DOOR

LEVEL 2 - OCCUPANT H-POINT

LEVEL 1 - AXLE CENTERLINE HEIGHT OR SILL TOP HEIGHT

MEASUREMENTS ARE TAKEN WHEN THE VEHICLE IS IN THE "AS TESTED" CONFIGURATION.

Measurements Along the Vertical 750 mm Line Shown Above:

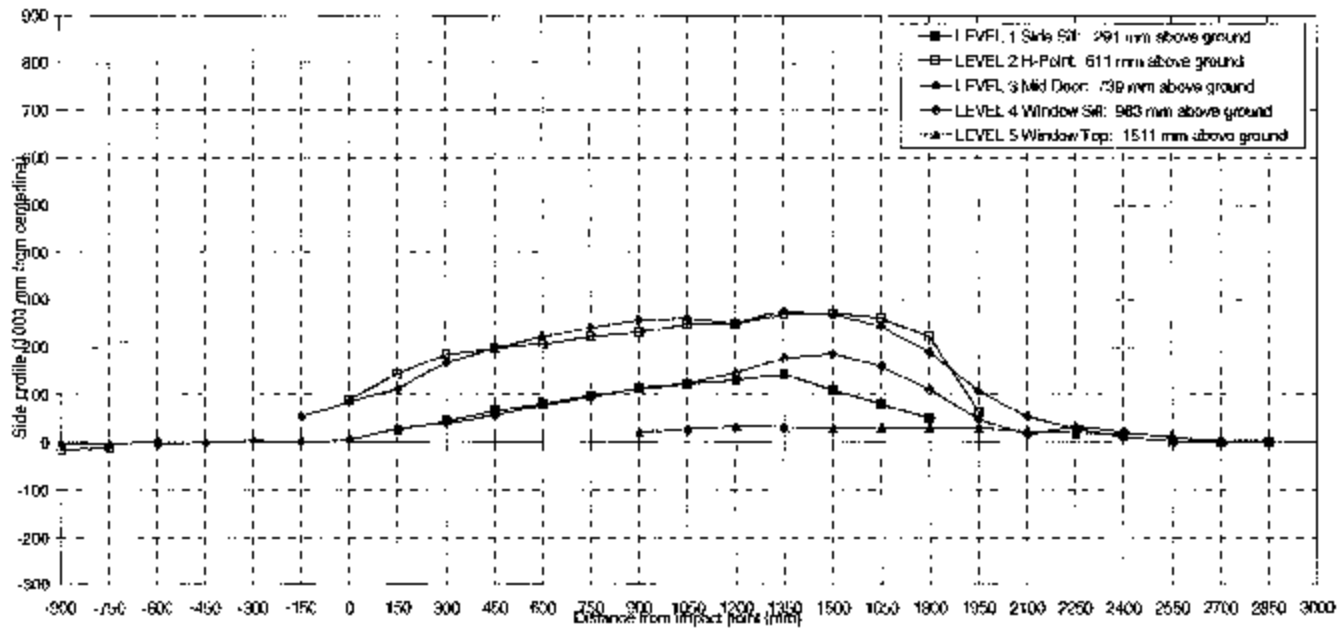
| | | | |
|--|---|-------------|-------------|
| Level 5 @ Window Top | = | <u>1511</u> | millimeters |
| Level 4 @ Window Sill | = | <u>963</u> | millimeters |
| Level 3 @ Mid Door | = | <u>739</u> | millimeters |
| Level 2 @ Occupant H-Point | = | <u>611</u> | millimeters |
| Level 1 @ Axle Centerline Height (or Sill Top Height) | = | <u>291</u> | millimeters |

DATA SHEET 10

VEHICLE EXTERIOR CRUSH PROFILES - ALL LEVELS

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603



NHTA: All dimensions in millimeters with a tolerance of ±1 mm.

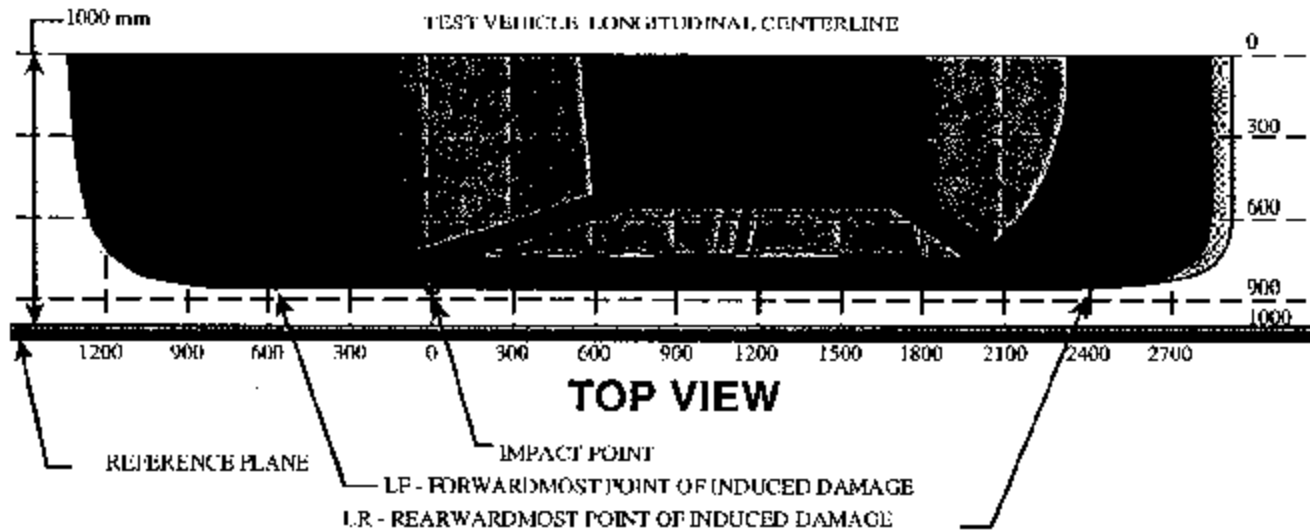
| | | | DISTANCE IN MILLIMETERS (mm) FROM IMPACT POINT | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|-------------|-------|--|------|------|------|------|------|-----|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| LEVEL | HEIGHT (mm) | | -900 | -750 | -600 | -450 | -300 | -150 | | 150 | 300 | 450 | 600 | 750 | 900 | 1050 | 1200 | 1350 | 1500 | 1650 | 1800 | 1950 | 2100 | 2250 | 2400 | 2550 | 2700 | 2850 | 3000 | |
| LEVEL 1 SIDE SILL | 291 | PRE | - | - | - | - | - | - | | 193 | 199 | 193 | 197 | 194 | 194 | 194 | 194 | 193 | 193 | 193 | 193 | - | - | - | - | - | - | - | - | |
| | | POST | - | - | - | - | - | - | | 218 | 245 | 261 | 278 | 292 | 306 | 317 | 324 | 333 | 337 | 337 | 276 | 235 | - | - | - | - | - | - | - | |
| | | CRUSH | N/A | N/A | N/A | N/A | N/A | N/A | | 25 | 46 | 66 | 81 | 98 | 112 | 123 | 130 | 144 | 139 | 80 | 51 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | |
| LEVEL 2 H POINT | 611 | PRE | 224 | 178 | - | - | - | - | | 158 | 154 | 150 | 148 | 145 | 148 | 148 | 149 | 152 | 153 | 158 | 156 | 140 | - | - | - | 151 | 183 | 182 | - | |
| | | POST | 206 | 168 | | - | - | - | | 302 | 308 | 348 | 364 | 366 | 378 | 384 | 396 | 419 | 423 | 415 | 377 | 204 | - | - | - | 154 | 162 | 184 | - | |
| | | CRUSH | -16 | -10 | N/A | N/A | N/A | N/A | | 144 | 184 | 196 | 206 | 221 | 230 | 248 | 247 | 267 | 270 | 259 | 721 | 61 | N/A | N/A | N/A | 3 | -1 | 2 | N/A | |
| LEVEL 3 MID DOOR | 739 | PRE | 265 | 206 | 154 | - | - | 143 | | 154 | 148 | 148 | 145 | 146 | 144 | 144 | 142 | 146 | 150 | 145 | 151 | 146 | 136 | 139 | 145 | 163 | 197 | 220 | - | |
| | | POST | 281 | 202 | 157 | - | - | 197 | | 288 | 316 | 345 | 366 | 385 | 399 | 404 | 391 | 422 | 417 | 387 | 340 | 263 | 191 | 187 | 157 | 167 | 187 | 220 | - | |
| | | CRUSH | 4 | 4 | 3 | N/A | N/A | 54 | | 132 | 168 | 197 | 221 | 236 | 255 | 260 | 219 | 276 | 267 | 242 | 189 | 167 | 55 | 28 | 12 | 4 | 0 | 0 | N/A | |
| LEVEL 4 WINDOW SILL | 983 | PRE | - | - | 295 | 262 | 241 | 227 | | 201 | 197 | 191 | 186 | 185 | 181 | 188 | 177 | 176 | 175 | 160 | 176 | 150 | 162 | 185 | 192 | 190 | 211 | 231 | - | |
| | | POST | - | - | 290 | 262 | 246 | 226 | | 290 | 237 | 219 | 263 | 280 | 285 | 312 | 323 | 358 | 381 | 339 | 286 | 207 | 199 | 219 | 215 | 208 | 218 | 236 | - | |
| | | CRUSH | N/A | N/A | 5 | 0 | 5 | 1 | | 29 | 40 | 58 | 77 | 95 | 114 | 124 | 146 | 177 | 186 | 159 | 110 | 49 | 17 | 34 | 23 | 10 | 5 | 5 | N/A | |
| LEVEL 5 WINDOW TOP | 1511 | PRE | - | - | - | - | - | - | | - | - | - | - | - | 427 | 420 | 423 | 418 | 419 | 418 | 419 | 420 | 423 | 429 | 441 | 461 | - | - | - | |
| | | POST | - | - | - | - | - | - | | - | - | - | - | - | 468 | 468 | 456 | 451 | 449 | 449 | 451 | 450 | 447 | 449 | 400 | 470 | - | - | - | |
| | | CRUSH | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | 21 | 29 | 33 | 32 | 30 | 31 | 32 | 30 | 24 | 23 | 19 | 15 | N/A | N/A | N/A |

DATA SHEET 11

VEHICLE DAMAGE PROFILE DISTANCES

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603



MEASUREMENT CONVENTIONS:

Forward of the impact point (towards front of vehicle) is considered negative (—).
Rearward of the impact point (toward rear of vehicle) is considered positive (+).

NOTE: All dimensions are in millimeters with tolerance of ± 3 mm.

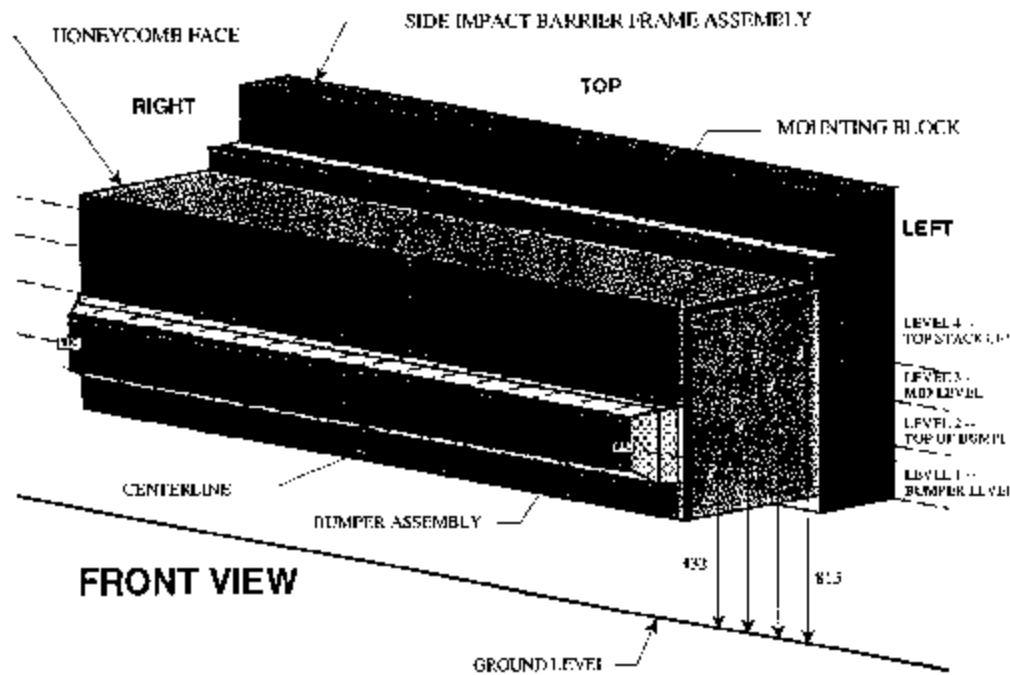
| DPD MEASUREMENTS | | POST TEST (mm) | PRETEST (mm) | STATIC CRUSH (mm) |
|------------------|----------------|----------------|--------------|-------------------|
| 1 | (LR = 2850 mm) | 236 | 231 | 5 |
| 2 | 2160 | 181 | 137 | 44 |
| 3 | 1470 | 418 | 149 | 269 |
| 4 | 780 | 388 | 146 | 242 |
| 5 | 90 | 276 | 154 | 122 |
| 6 | (LF = -600 mm) | 157 | 154 | 3 |

DATA SHEET 12

EXTERIOR STATIC CRUSH FOR IMPACTOR FACE

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603



NOTE: Dimensions are shown in millimeters, mm

NOTE: All dimensions are in millimeters with a tolerance of ± 3 mm

| | | | DISTANCE RIGHT OF CENTER (mm) | | | | | | | | | | | DISTANCE LEFT OF CENTER (mm) | | | | | | | | | |
|--------------------------|--------------------|-------|-------------------------------|-----|-----|-----|-----|-----|-----|-----|--|-----|-----|------------------------------|-----|-----|-----|-----|-----|--|--|--|--|
| LEVEL | HEIGHT AT CL (mm)* | | 800 | 700 | 600 | 500 | 400 | 300 | 200 | 100 | | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | | | | |
| LEVEL 4 TOP STACK | 813 | PRE | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | | | | |
| | | POST | 706 | 680 | 659 | 651 | 659 | 682 | 664 | 656 | | 668 | 682 | 693 | 716 | 722 | 740 | 774 | 798 | | | | |
| | | CRUSH | 87 | 61 | 40 | 32 | 40 | 63 | 45 | 37 | | 19 | 63 | 74 | 87 | 103 | 121 | 155 | 179 | | | | |
| LEVEL 3 MID LEVEL | 686 | PRE | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | | | | |
| | | POST | 697 | 672 | 654 | 639 | 639 | 662 | 652 | 649 | | 662 | 670 | 679 | 686 | 702 | 718 | 743 | 758 | | | | |
| | | CRUSH | 68 | 53 | 35 | 20 | 20 | 43 | 33 | 30 | | 43 | 51 | 60 | 67 | 83 | 99 | 124 | 149 | | | | |
| LEVEL 2 TOP BUMPER | 533 | PRE | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | | 619 | 619 | 619 | 619 | 619 | 619 | 619 | 619 | | | | |
| | | POST | 701 | 691 | 689 | 690 | 690 | 689 | 696 | 701 | | 714 | 721 | 728 | 735 | 741 | 750 | 766 | 787 | | | | |
| | | CRUSH | 82 | 72 | 70 | 71 | 71 | 70 | 77 | 82 | | 95 | 102 | 109 | 116 | 122 | 131 | 147 | 168 | | | | |
| LEVEL 1 MID BUMPER | 432 | PRE | 535 | 519 | 518 | 518 | 518 | 518 | 518 | 518 | | 518 | 518 | 518 | 518 | 518 | 518 | 519 | 535 | | | | |
| | | POST | 704 | 675 | 658 | 641 | 641 | 640 | 644 | 650 | | 658 | 662 | 668 | 675 | 682 | 699 | 716 | 744 | | | | |
| | | CRUSH | 160 | 156 | 140 | 126 | 123 | 122 | 126 | 132 | | 140 | 144 | 150 | 158 | 164 | 175 | 197 | 209 | | | | |

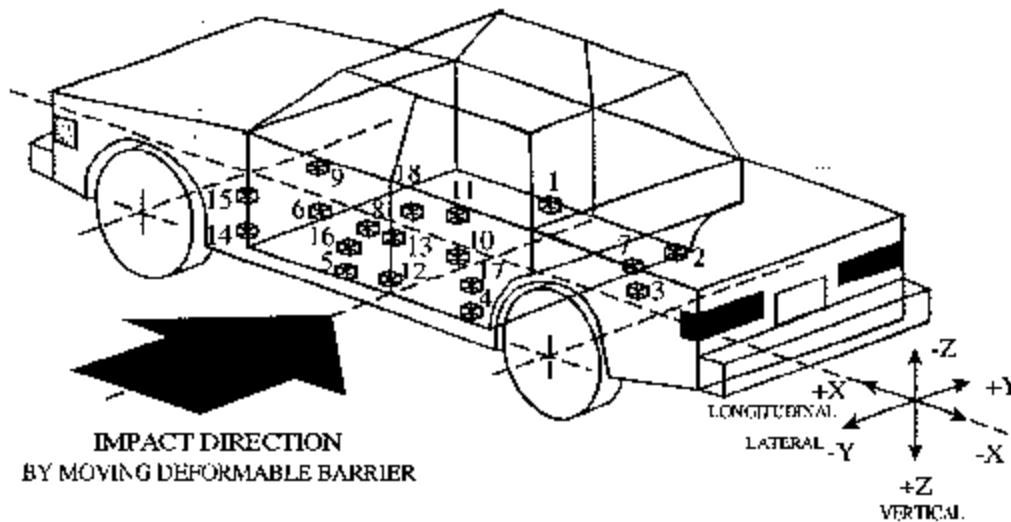
*Heights measured above ground level.

DATA SHEET 13

TEST VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603



- | | |
|------------------------------------|------------------------------------|
| 1-Right Side Sill @ Front Seat | 10-Midrear of Left Rear Door |
| 2-Right Side Sill @ Rear Seat | 11-Left Rear Door Upper Centerline |
| 3-Rear Floorpan Above Axle | 12-Left Lower B-Pillar |
| 4-Left Side Sill @ Rear Seat | 13-Left Middle B-Pillar |
| 5-Left Side Sill @ Front Seat | 14-Left Lower A-Pillar |
| 6-Left Front Door on Centerline | 15-Left Middle A-Pillar |
| 7-Right Rear Occupant Compartment | 16-Front Seat Track |
| 8-Midrear of Left Front Door | 17-Rear Seat Track |
| 9-Left Front Door Upper Centerline | 18-Vehicle CG |

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603

| Accel No. | Location | Coordinates (mm)±3 mm | | | Long. (x) | | Lat. (y) | | Vert. (z) | | Resultant | |
|-----------|----------------------------------|-----------------------|------|------|------------|-------------|----------|-------------|-----------|-------------|-----------|-------------|
| | | X* | Y* | Z* | Max (g) | Time (msec) | Max (g) | Time (msec) | Max (g) | Time (msec) | Max (g) | Time (msec) |
| 1 | Right Side Sill at Front Seat | 2653 | 692 | -325 | pos. 3.3 | 59.5 | 18.0 | 16.0 | 4.2 | 71.6 | 19.8 | 15.1 |
| | | | | | neg. -8.4 | 13.9 | -4.3 | 68.9 | -6.6 | 21.2 | - | - |
| 2 | Right Side Sill at Rear Seat | 1800 | 709 | -331 | pos. 3.7 | 59.2 | 24.6 | 16.1 | 4.7 | 87.2 | 26.7 | 16.2 |
| | | | | | neg. -7.1 | 13.8 | -3.4 | 70.8 | -9.8 | 17.0 | - | - |
| 3 | Rear Floorpan Above Axle | 1028 | 22 | -683 | pos. 3.5 | 59.3 | 19.9 | 8.6 | 8.6 | 17.5 | 22.7 | 8.7 |
| | | | | | neg. -10.9 | 8.9 | -1.9 | 109.4 | -4.8 | 55.0 | - | - |
| 4 | Left Side Sill at Rear Seat | 1814 | -670 | -326 | pos. - | - | 124.7 | 7.4 | - | - | - | - |
| | | | | | neg. - | - | -13.7 | 17.5 | - | - | - | - |
| 5 | Left Side Sill at Front Seat | 2656 | -651 | -371 | pos. - | - | 72.8 | 7.9 | - | - | - | - |
| | | | | | neg. - | - | -14.0 | 27.0 | - | - | - | - |
| 6** | Left Front Door on Centerline | | | | pos. - | - | - | - | - | - | - | - |
| | | | | | neg. - | - | - | - | - | - | - | - |
| 7 | Right Rear Occupant Compartment | 1791 | 407 | -245 | pos. - | - | 26.5 | 16.3 | - | - | - | - |
| | | | | | neg. - | - | -3.3 | 86.0 | - | - | - | - |
| 8** | Midrear of Left Front Door | | | | pos. - | - | - | - | - | - | - | - |
| | | | | | neg. - | - | - | - | - | - | - | - |
| 9** | Left Front Door Upper Centerline | | | | pos. - | - | - | - | - | - | - | - |
| | | | | | neg. - | - | - | - | - | - | - | - |
| 10** | Midrear of Left Rear Door | | | | pos. - | - | - | - | - | - | - | - |
| | | | | | neg. - | - | - | - | - | - | - | - |
| 11** | Left Rear Door Upper Centerline | | | | pos. - | - | - | - | - | - | - | - |
| | | | | | neg. - | - | - | - | - | - | - | - |

Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Down)

*Reference: X - Rear Bumper (- Forward)

**Accelerometer was not requested by COTR.

DATA SHEET 13 (continued)

VEHICLE ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603

| Accel. No. | Location | Coordinates (mm)±3 mm | | | Long. (x) | | Lat. (y) | | Vert. (z) | | Resultant | |
|---------------|----------------------|--------------------------|------|-------|------------|----------------|------------|----------------|------------|----------------|------------|----------------|
| | | X* | Y* | Z* | Max (g) | Time (msec) | Max (g) | Time (msec) | Max (g) | Time (msec) | Max (g) | Time (msec) |
| | | | | | | | | | | | | |
| 12 | Left Lower B-Pillar | 2087 | -646 | -470 | - | - | 240.0 | 6.5 | - | - | - | - |
| | | | | | pos. | - | -126.9 | 11.5 | - | - | - | - |
| 13 | Left Middle B-Pillar | 2014 | -669 | -855 | - | - | 116.0 | 5.4 | - | - | - | - |
| | | | | | pos. | - | -45.1 | 44.9 | - | - | - | - |
| 14 | Left Lower A-Pillar | 3117 | -594 | -599 | - | - | 90.2 | 4.3 | - | - | - | - |
| | | | | | pos. | - | -29.1 | 38.8 | - | - | - | - |
| 15 | Left Middle A-Pillar | 3104 | -621 | -1078 | - | - | 25.8 | 12.4 | - | - | - | - |
| | | | | | pos. | - | -15.9 | 25.6 | - | - | - | - |
| 16 | Front Seat Track | 2195 | -578 | -494 | - | - | 35.3 | 5.4 | - | - | - | - |
| | | | | | pos. | - | -57.5 | 13.2 | - | - | - | - |
| 17 | Rear Seat Track | 1180 | -521 | -680 | - | - | 26.9 | 13.7 | - | - | - | - |
| | | | | | pos. | - | -2.2 | 107.3 | - | - | - | - |
| 18 | Vehicle CG | 2478 | 24 | -529 | 21.2 | 28.0 | 65.8 | 20.1 | 33.7 | 31.8 | 71.8 | 20.2 |
| | | | | | pos. | 23.5 | -17.7 | 49.3 | -22.0 | 19.4 | - | - |

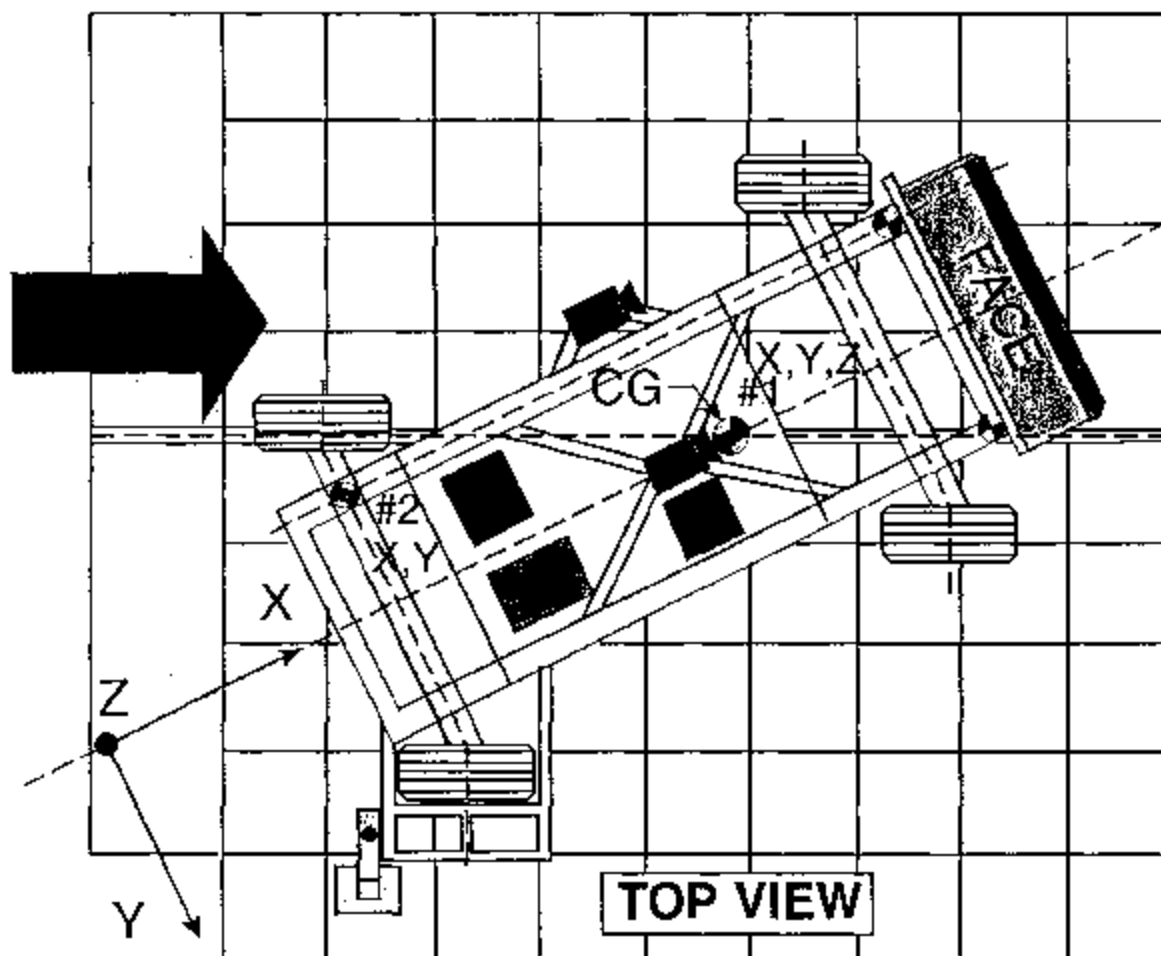
*Reference: X - Rear Bumper (- Forward) Y - Vehicle Centerline (+ To Right) Z - Ground Level (+ Down)

DATA SHEET 14

MDB ACCELEROMETER LOCATIONS AND DATA SUMMARY

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603



| Accel. No. | Location | Coordinates (millimeters) | | | Pos. Direct. | | Neg. Direct. | |
|------------|-----------------------|---------------------------|------|------|--------------|-------------|--------------|-------------|
| | | X* | Y* | Z* | Max (g) | Time (msec) | Max (g) | Time (msec) |
| 1 | MDB Center of Gravity | | | | | | | |
| | Longitudinal... X | 1859 | 0 | -330 | 1.3 | 121.2 | -20.7 | 43.2 |
| | Lateral..... Y | | | | 0.0 | 158.2 | -8.4 | 15.8 |
| | Vertical..... Z | | | | 18.9 | 26.5 | -22.2 | 21.3 |
| | Resultant..... R | | | | 28.3 | 44.2 | - | - |
| 2 | Rear Frame Member | | | | | | | |
| | Longitudinal... X | 386 | -660 | -660 | 2.1 | 89.6 | 21.5 | 36.4 |
| | Lateral..... Y | | | | 4.1 | 19.0 | -1.8 | 113.2 |

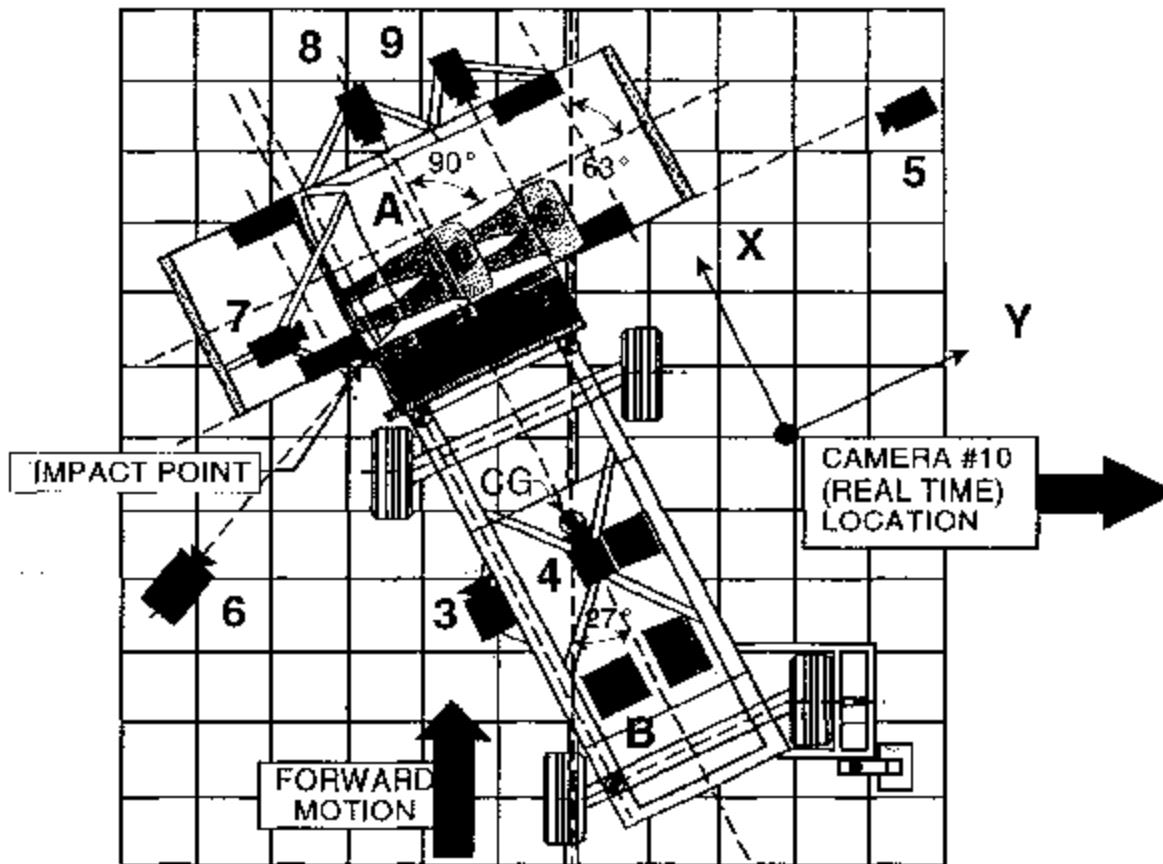
*Reference: X = Rear Bumper (+ Forward)
Y = Vehicle Centerline (+ To Right)
Z = Ground Level (+ Down)
All measurements accurate to within ± 3 mm.

DATA SHEET 15

HIGH SPEED CAMERA LOCATIONS AND DATA SUMMARY

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No. C35603



| Camera No. | View | Coordinates (millimeters) | | | Angle (deg.) | Lens (mm) | Film Speed (fps) |
|------------|--|---------------------------|-------|-------|--------------|-----------|------------------|
| | | X* | Y* | Z* | | | |
| 1 | Overhead view of test vehicle | 105 | 825 | -4880 | -90 | 8 | 1005 |
| 2 | Overhead closeup view of impact plane | 232 | 880 | -4880 | -90 | 12.5 | † |
| 3 | MDB onboard closeup view of impact point | -1470 | 0 | -847 | 0 | 13 | 1020 |
| 4 | MDB onboard view of driver dummy | -1140 | 838 | -1586 | -17 | 7.5 | 1020 |
| 5 | Right side ground level overall view | 0 | 9165 | -1082 | -2 | 25 | 980 |
| 6 | Left side ground level overall view | -1550 | -1879 | -1063 | -4 | 13 | 1000 |
| 7 | Test vehicle onboard driver front view | 419 | 393 | -1390 | -11 | 13 | 820 |
| 8 | Test vehicle onboard driver side view | 1740 | 805 | -1140 | -11 | 8 | 1010 |
| 9 | Test vehicle onboard passenger side view | 1731 | 1645 | -1155 | -10 | 8 | 1005 |
| 10 | Real time film coverage of test | - | - | - | - | - | 24 |

* Reference (from point of impact); all measurements accurate to within ± 6 mm.

X = (Impact Point) + Forward

Y = (Impact Point) + To Right

Z = (Ground Level) + Down

† View not available, film broke.

SECTION 5

FUEL SYSTEM INTEGRITY

DATA SHEET 16

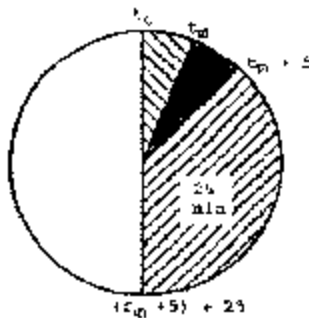
FMVSS 301 FUEL SYSTEM INTEGRITY DATA

NHTSA No.: C35603 TEST DATE: April 22, 2003
 Vehicle Mfr./Make/Model: Mitsubishi Motors Corporation 2003 Mitsubishi Outlander MPV

TEST VEHICLE IMPACT TYPE:

- Frontal (48.28 kph)
- Oblique (48.28 kph) with 0° barrier face first
 contacting the driver side
 (driver/passenger)
- Rear Moving Barrier (48.28 kph)
- Lateral Moving Barrier (32.19 kph)
- X Side Impact Moving Deformable Barrier (62.0 kph)
 contacting the driver side side
 (driver/passenger)

FUEL SPILLAGE MEASUREMENT:



1. From impact until vehicle motion ceases
2. For five minute period after vehicle motion ceases
3. For next 25 minutes

| ACTUAL | MAX ALLOWED |
|--------|-------------|
| 0 g | 28 g |
| 0 g | 142 g |
| 0 g | 28 g/1 min. |

SOLVENT SPILLAGE DETAILS:

None

DATA SHEET 17

ROLLOVER DATA

Vehicle: 2003 Mitsubishi Outlander MPV

NHTSA No.: C35603



90



180



REAR VIEW



I. DETERMINATION OF SOLVENT COLLECTION TIME PERIOD:

| Rollover Stage | Rotation Time (spec. 1-3 min) | | | | FMVSS 301 Hold Time | | Total Time | | | | Next Whole Minute Interval | |
|----------------|-------------------------------|---------|----|---------|---------------------|---------|------------|---------|----|---------|----------------------------|---------|
| 0° - 90° | 1 | minutes | 13 | seconds | 5 | minutes | 6 | minutes | 13 | seconds | 7 | minutes |
| 90° - 180° | 1 | minutes | 5 | seconds | 5 | minutes | 6 | minutes | 5 | seconds | 7 | minutes |
| 180° - 270° | 1 | minutes | 3 | seconds | 5 | minutes | 6 | minutes | 3 | seconds | 7 | minutes |
| 270° - 360° | 1 | minutes | 5 | seconds | 5 | minutes | 6 | minutes | 5 | seconds | 7 | minutes |

II. FMVSS 301 REQUIREMENTS: (Maximum allowable solvent spillage):

| First 5 minutes from onset of rotation | 6th min. | 7th min. | 8th min. (if required) |
|--|----------|----------|------------------------|
| 142 g | 28 g | 28 g | 28 g |

III. ACTUAL TEST VEHICLE SOLVENT SPILLAGE:

| Rollover Stage | First 5 minutes from onset of rotation (g) | 6th min. (g) | 7th min. (g) | 8th min. (if required) (g) |
|----------------|--|--------------|--------------|----------------------------|
| 0° - 90° | 0 | 0 | 0 | N/A |
| 90° - 180° | 0 | 0 | 0 | N/A |
| 180° - 270° | 0 | 0 | 0 | N/A |
| 270° - 360° | 0 | 0 | 0 | N/A |

Note: Record spillage for whole minute intervals only as determined above.

IV. SOLVENT SPILLAGE LOCATION(S):

| Rollover Stage | Spillage Location |
|----------------|-------------------|
| 0° - 90° | None |
| 90° - 180° | None |
| 180° - 270° | None |
| 270° - 360° | None |

APPENDIX A

PHOTOGRAPHS

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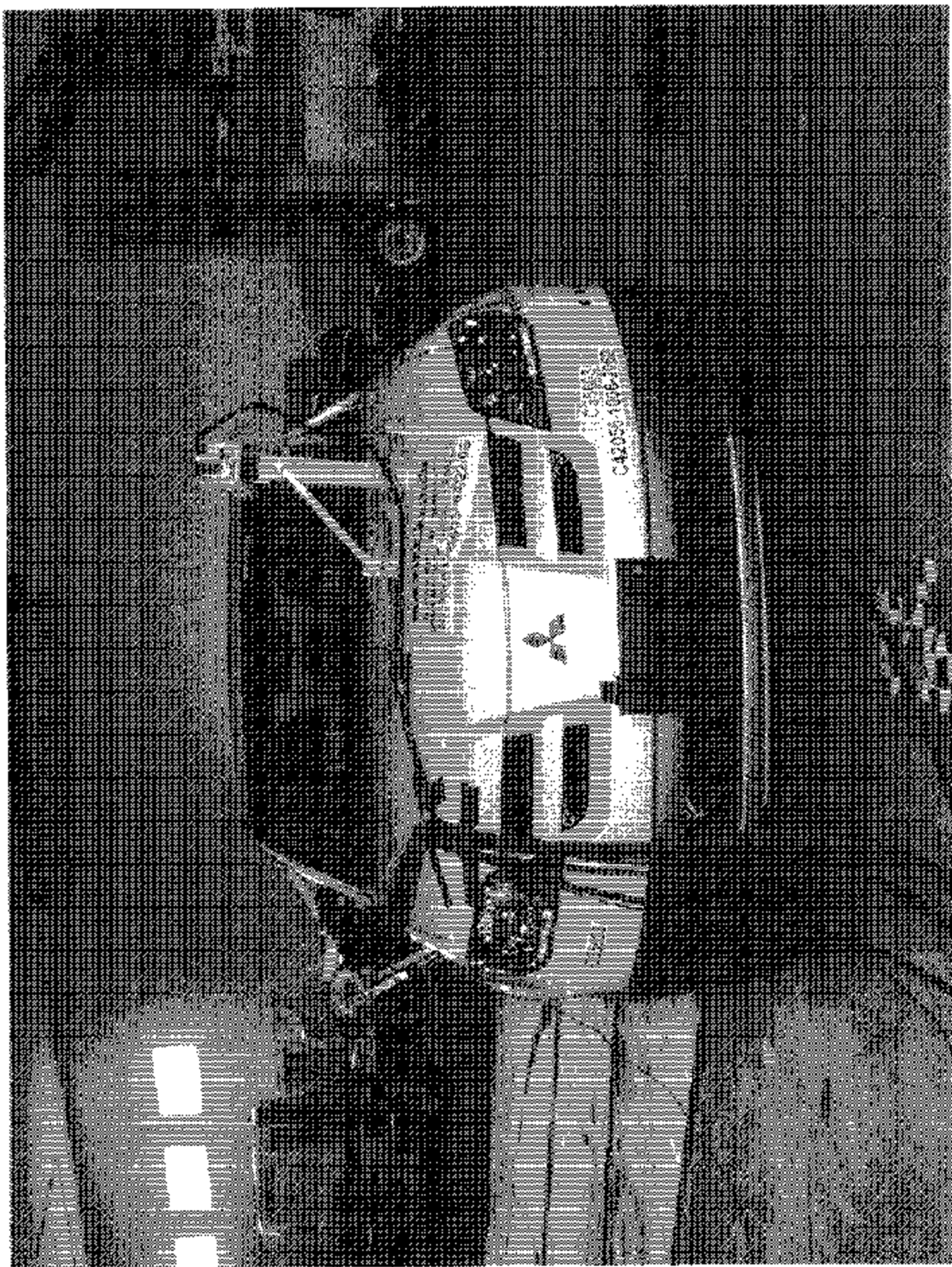


Figure A-1 PRE-TEST FRONTAL VIEW OF TEST VEHICLE

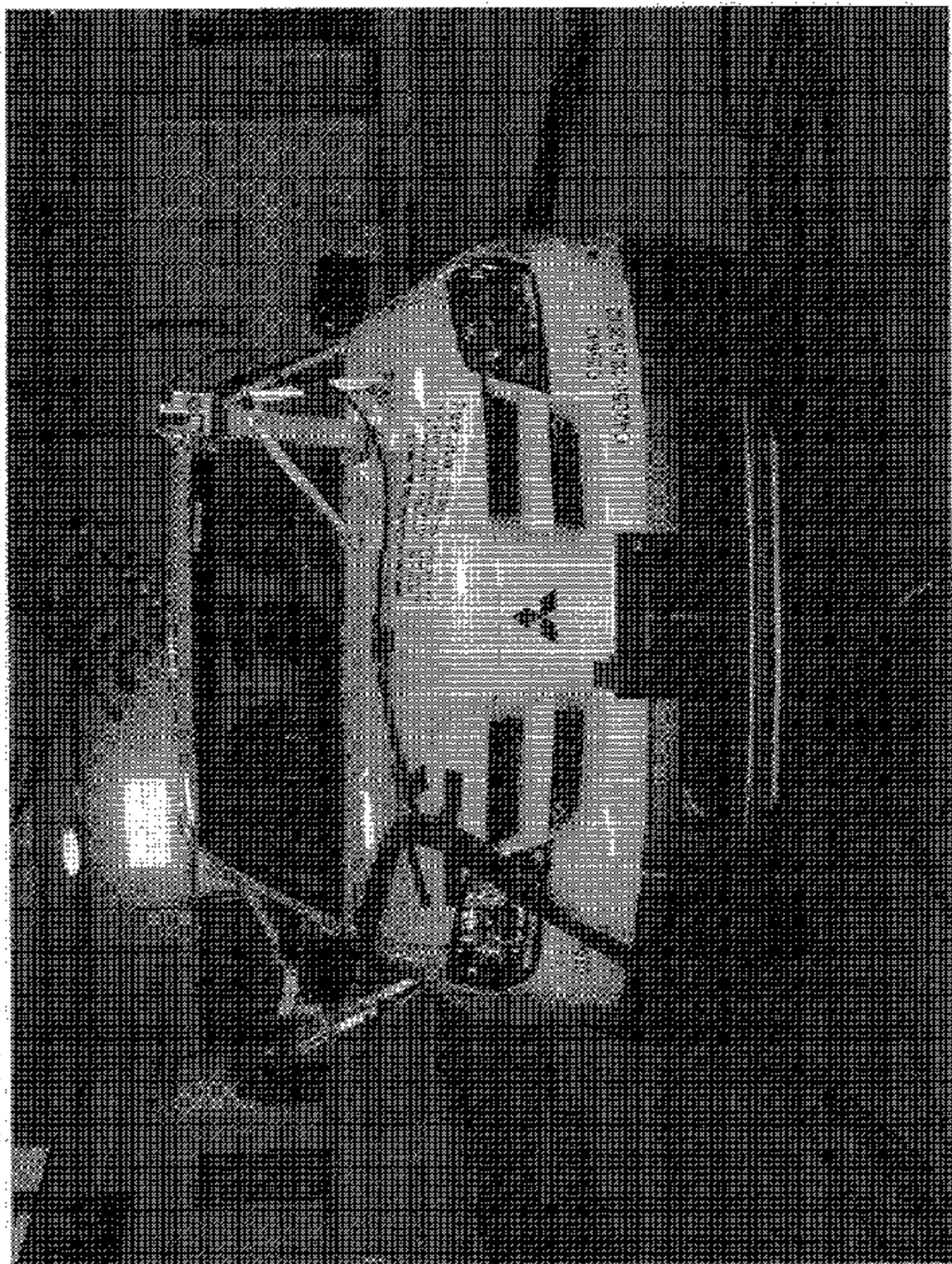


Figure A-2 POST-TEST FRONTAL VIEW OF TEST VEHICLE

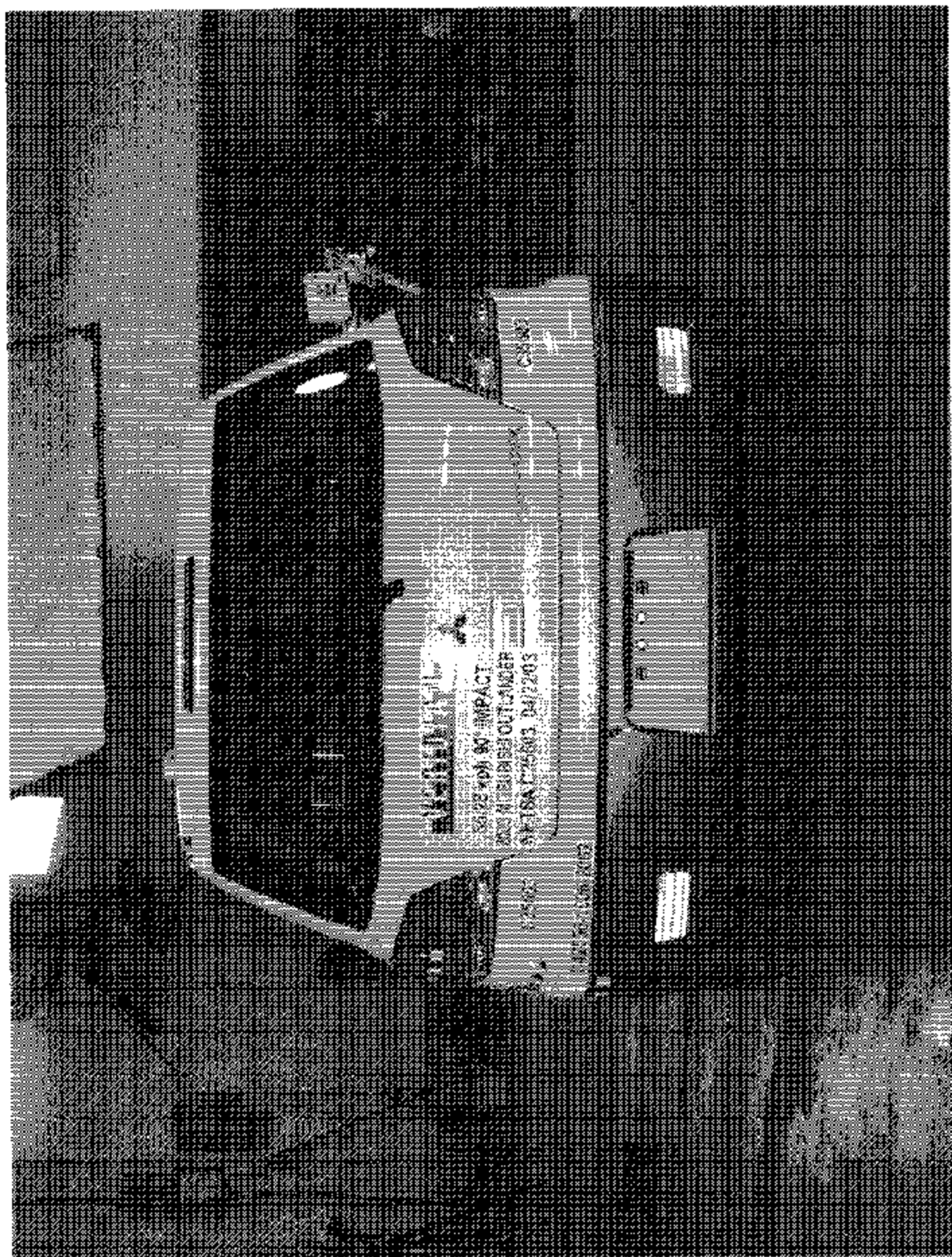


Figure A-3 PRE-TEST REAR VIEW OF TEST VEHICLE

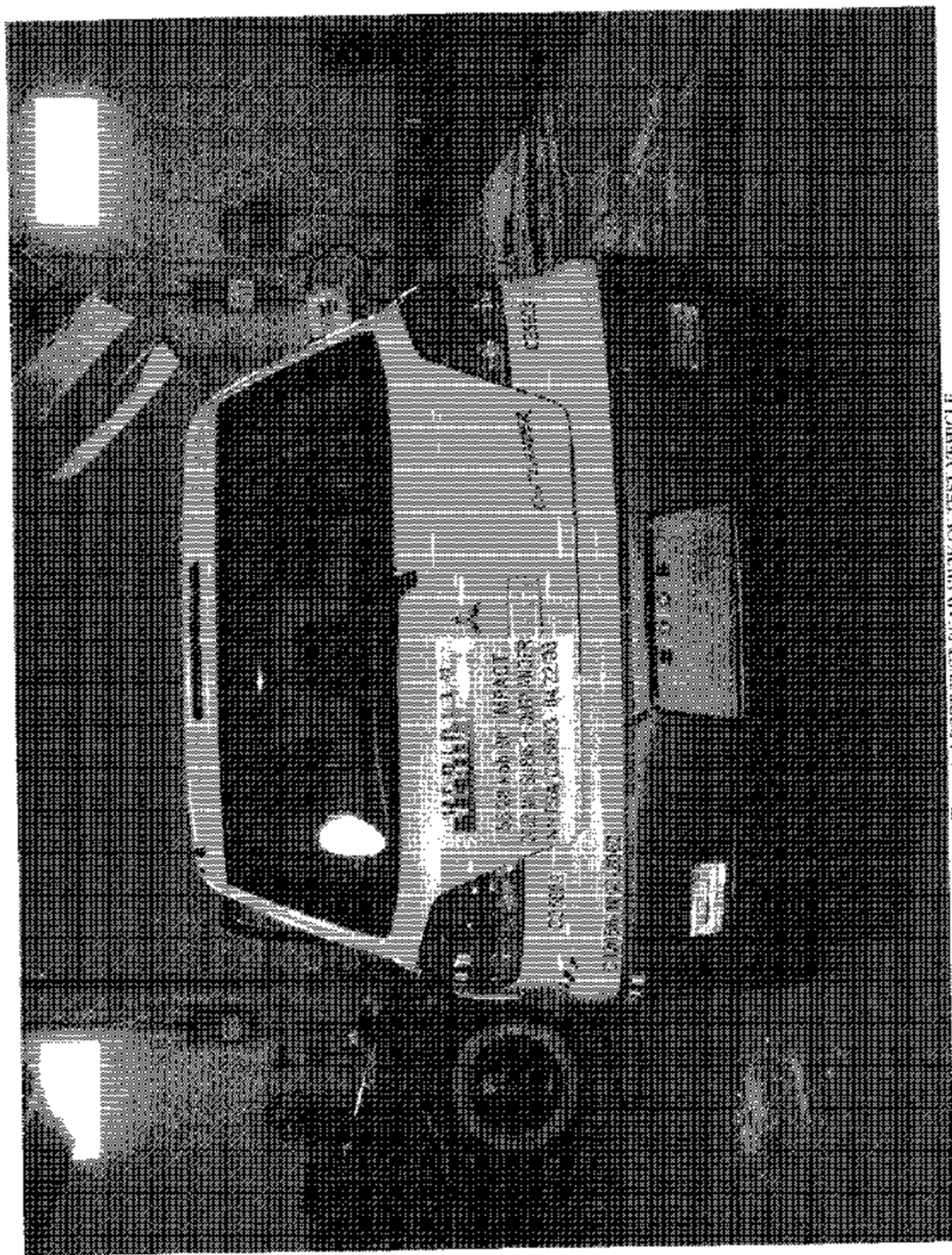


Figure A-3 POST-TEST REAR VIEW OF TEST VEHICLE

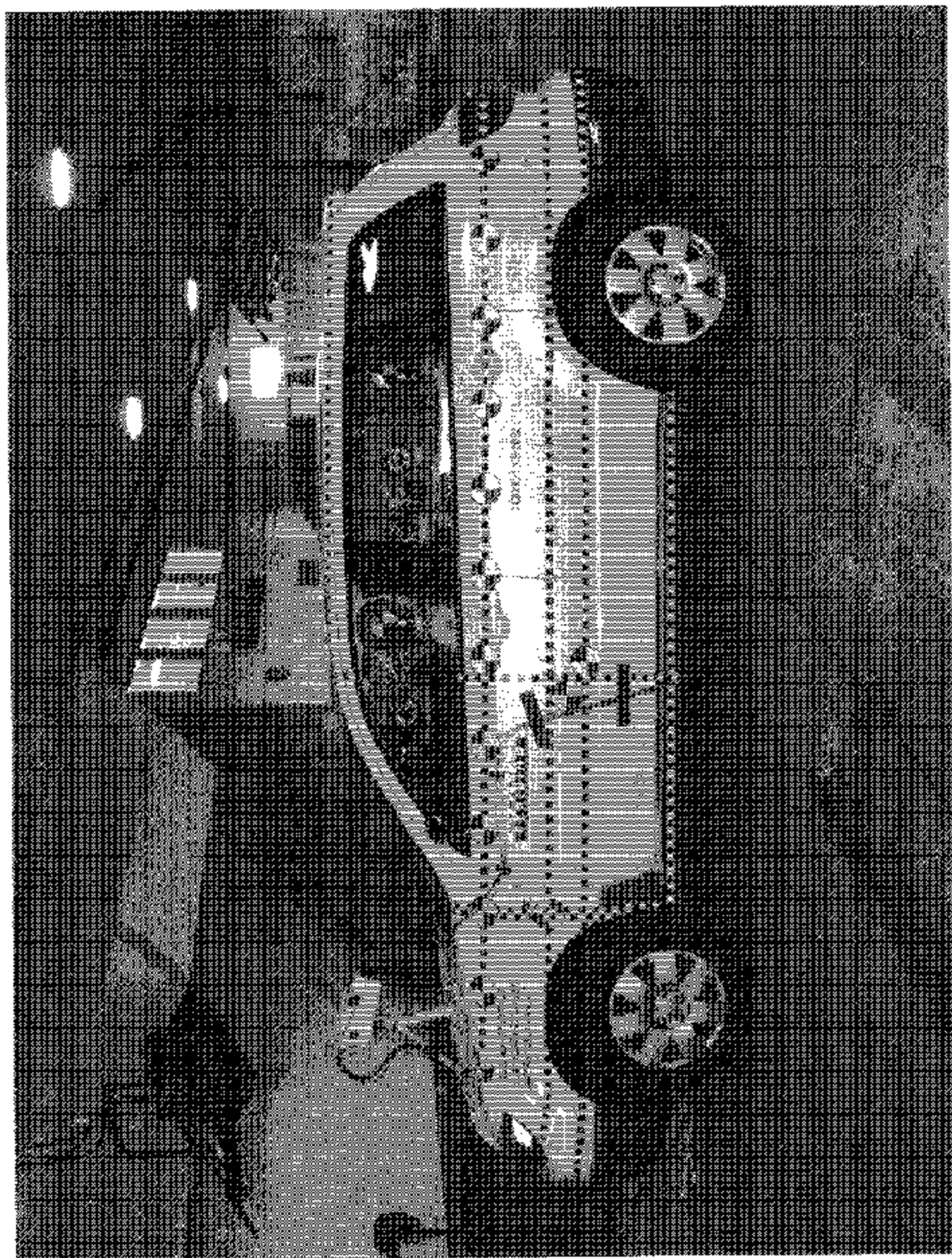


Figure A-5 PRE-TEST IMPACTED SIDE VIEW OF TEST VEHICLE

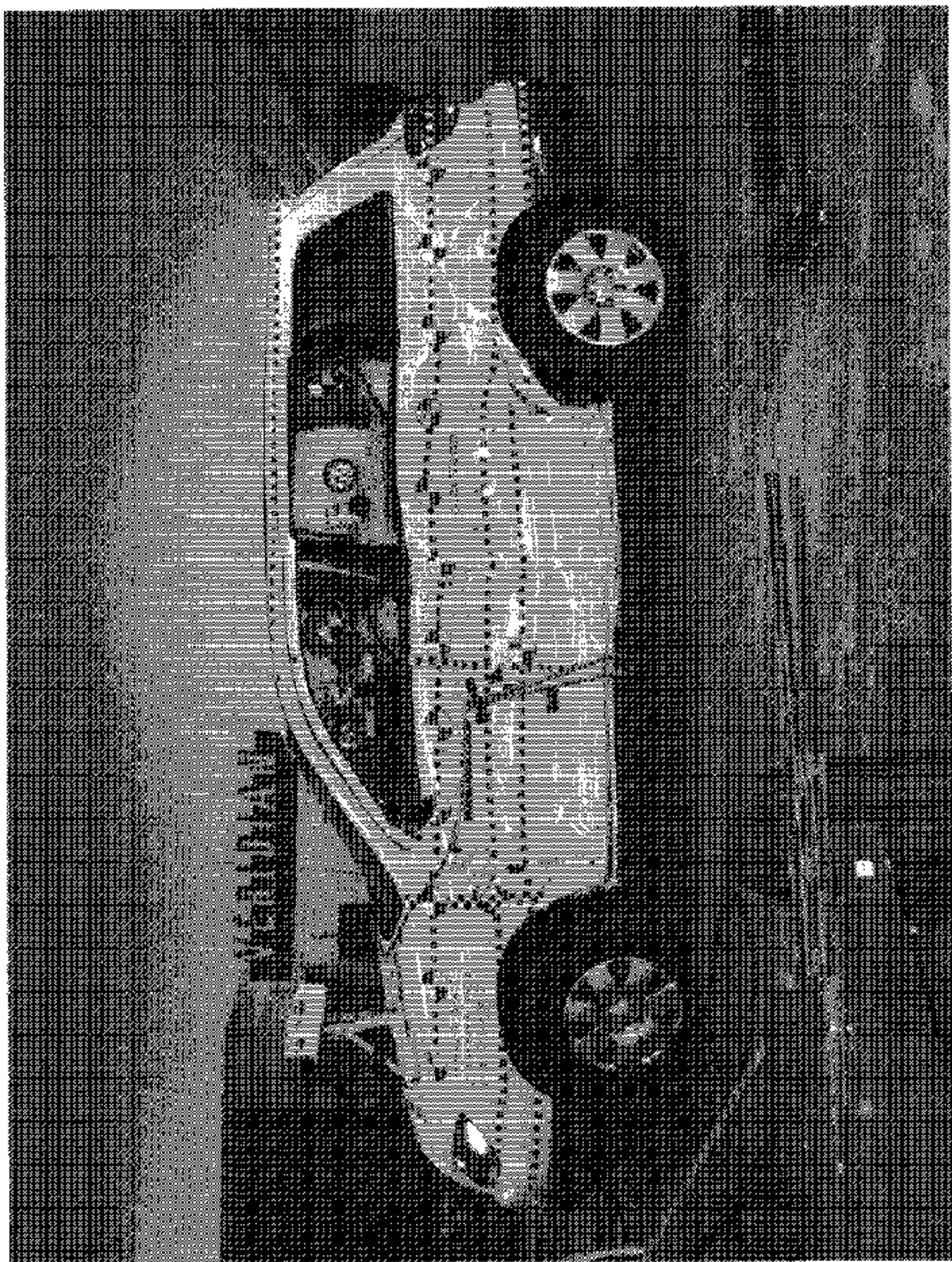


Figure A-6 POST-TEST IMPACTED SIDE VIEW OF TEST VEHICLE

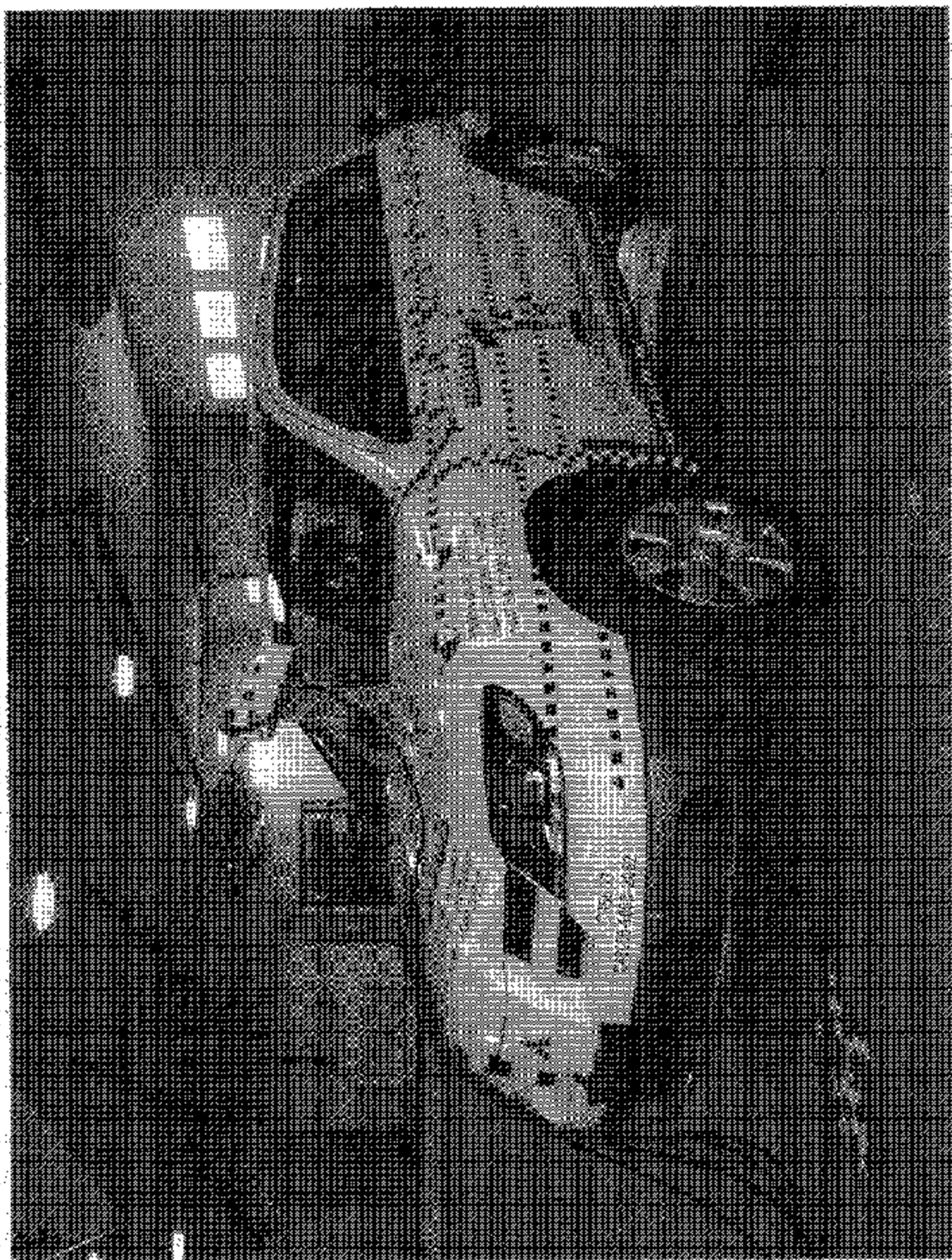


Figure A-7 FKE-TRST LEFT FRONT VIEW OF TEST VEHICLE

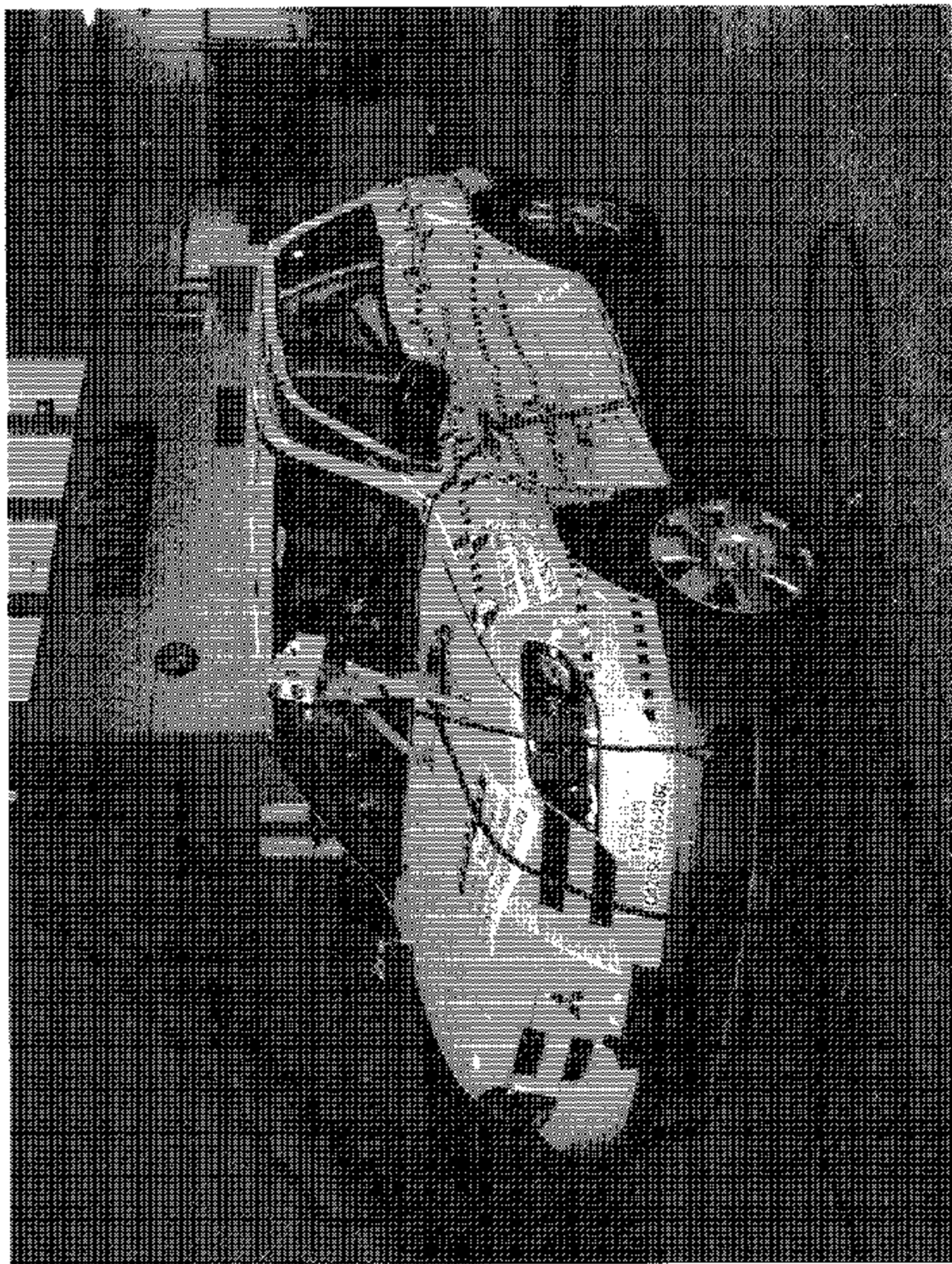


Figure A-8 POST-TEST LEFT FRONT VIEW OF TEST VEHICLE

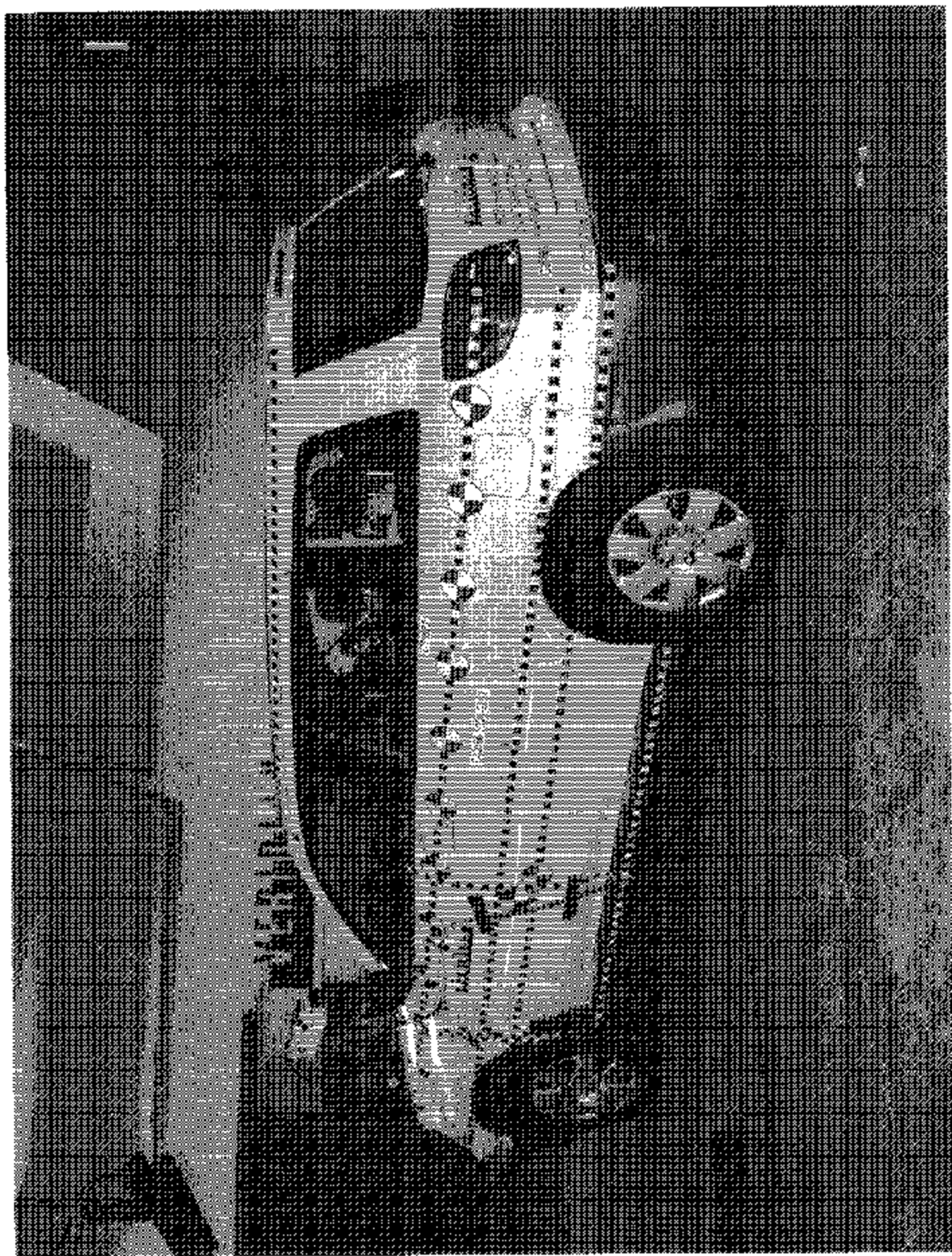


Figure A-9 PRE-TEST LEFT REAR VIEW OF TEST VEHICLE

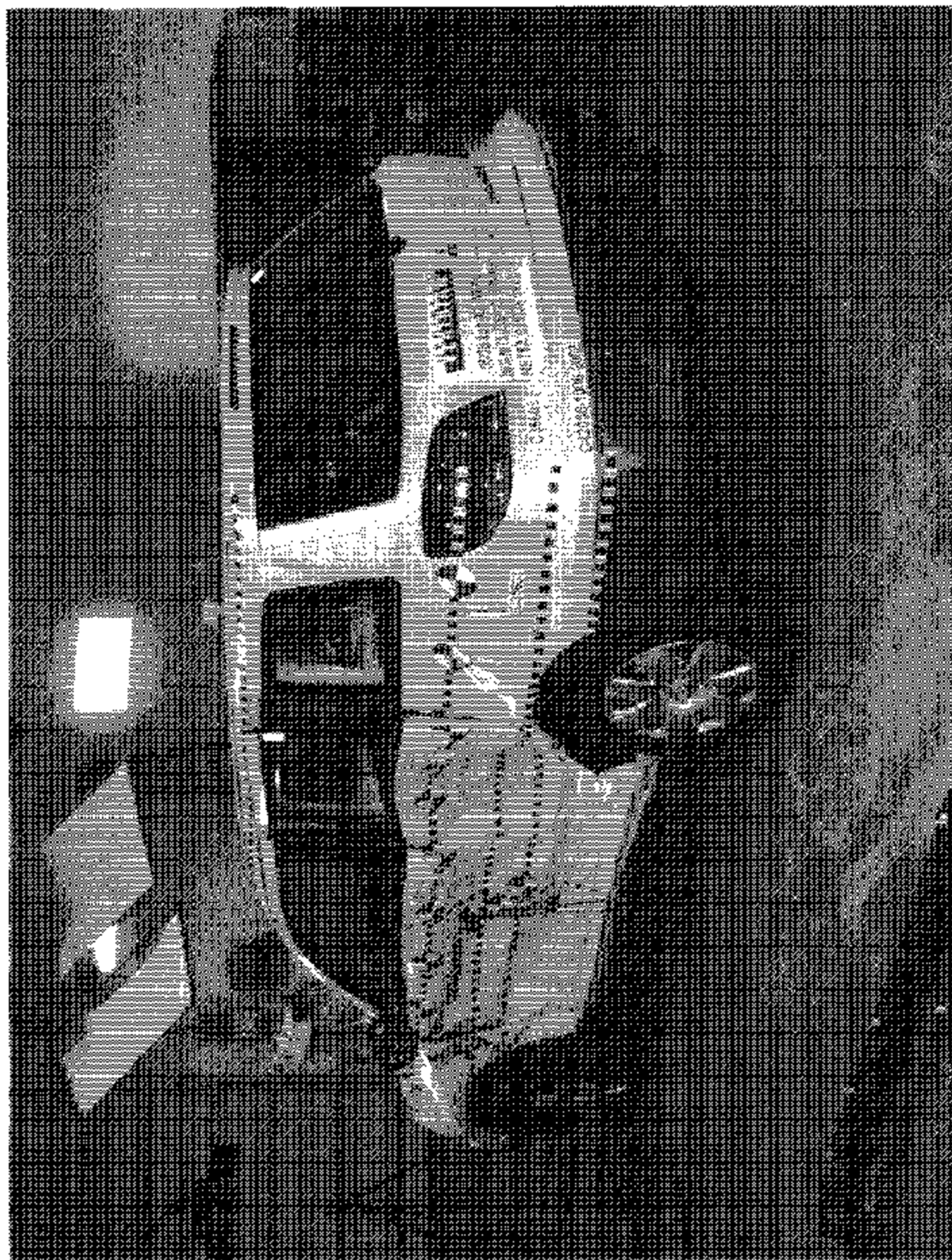


Figure A-10 POST-TEST LEFT REAR VIEW OF TEST VEHICLE

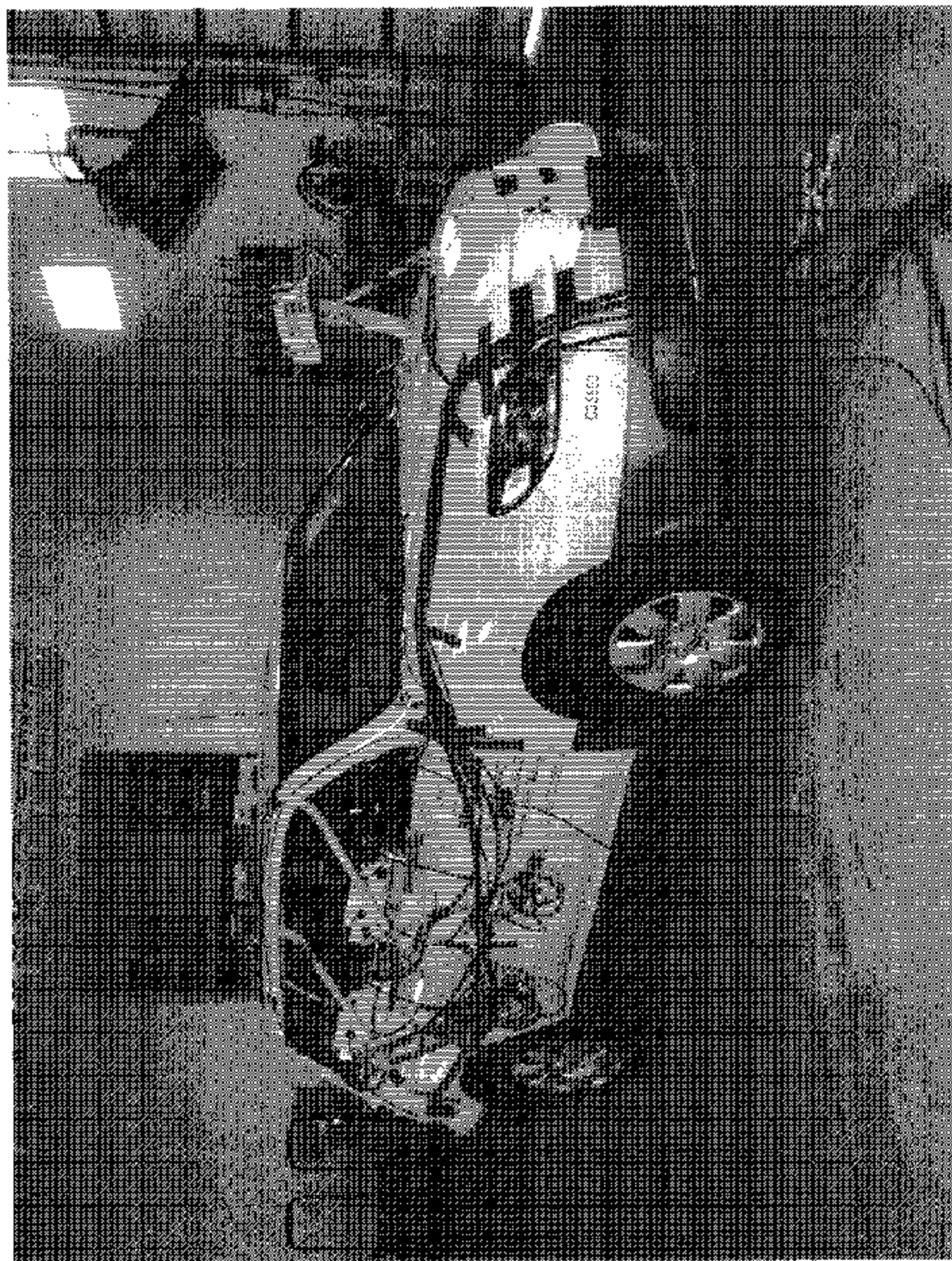


Figure A-11 PRE-TEST RIGHT FRONT VIEW OF TEST VEHICLE

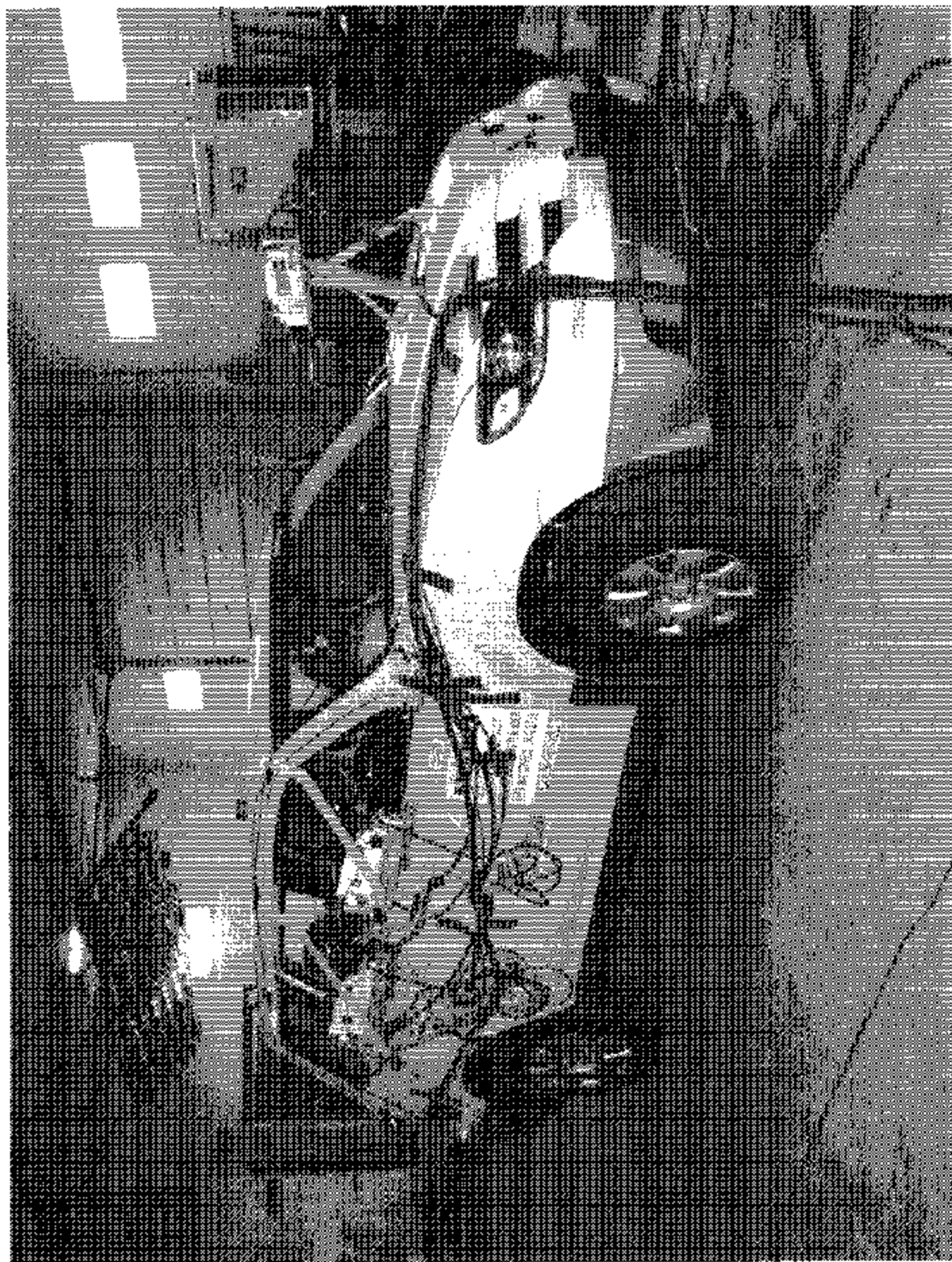


Figure A-12 PWS1-11ST RIGHT FRONT VIEW OF TEST VEHICLE

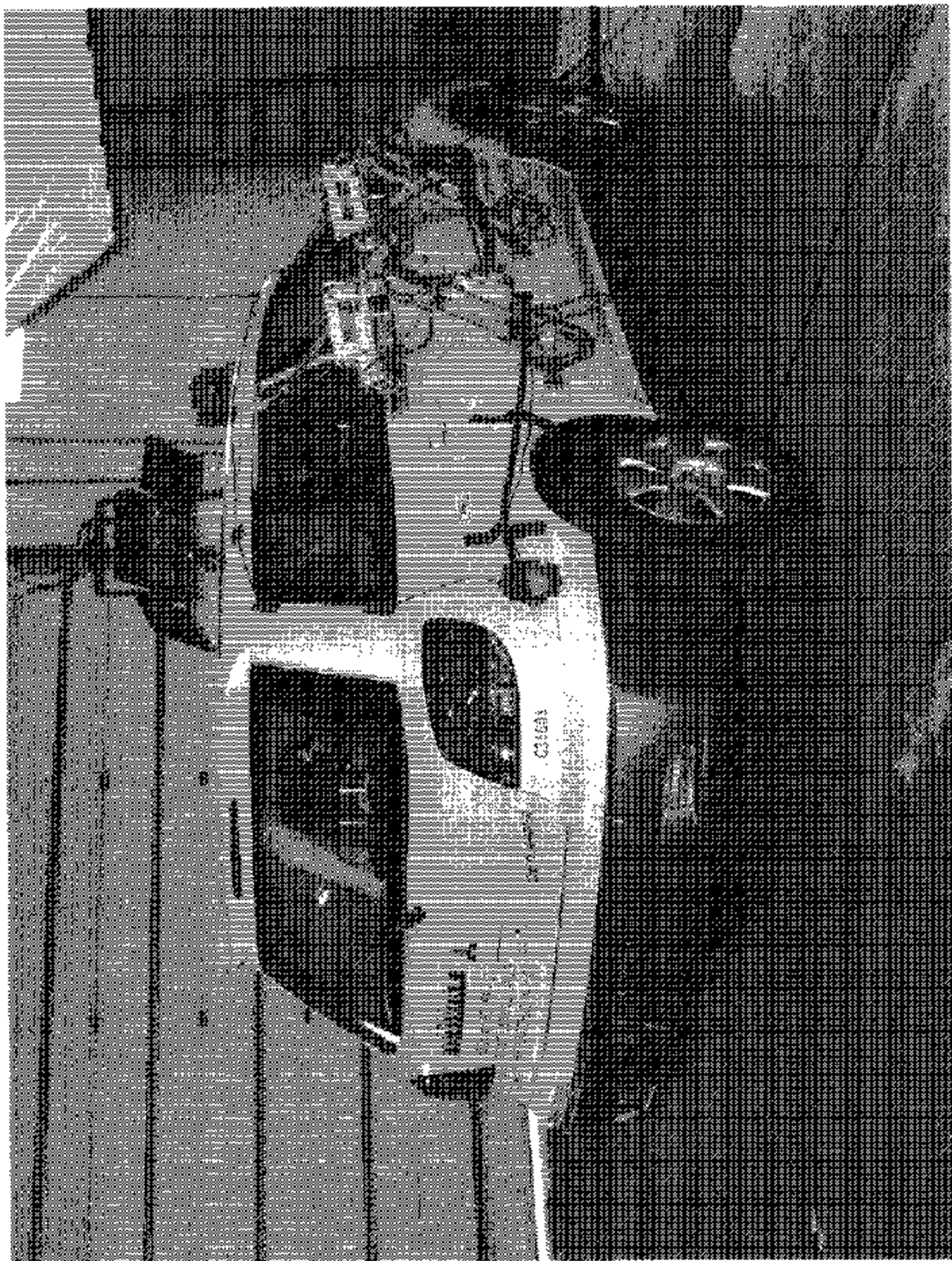


Figure A-13 PRE-TEST RIGHT REAR VIEW OF TEST VEHICLE

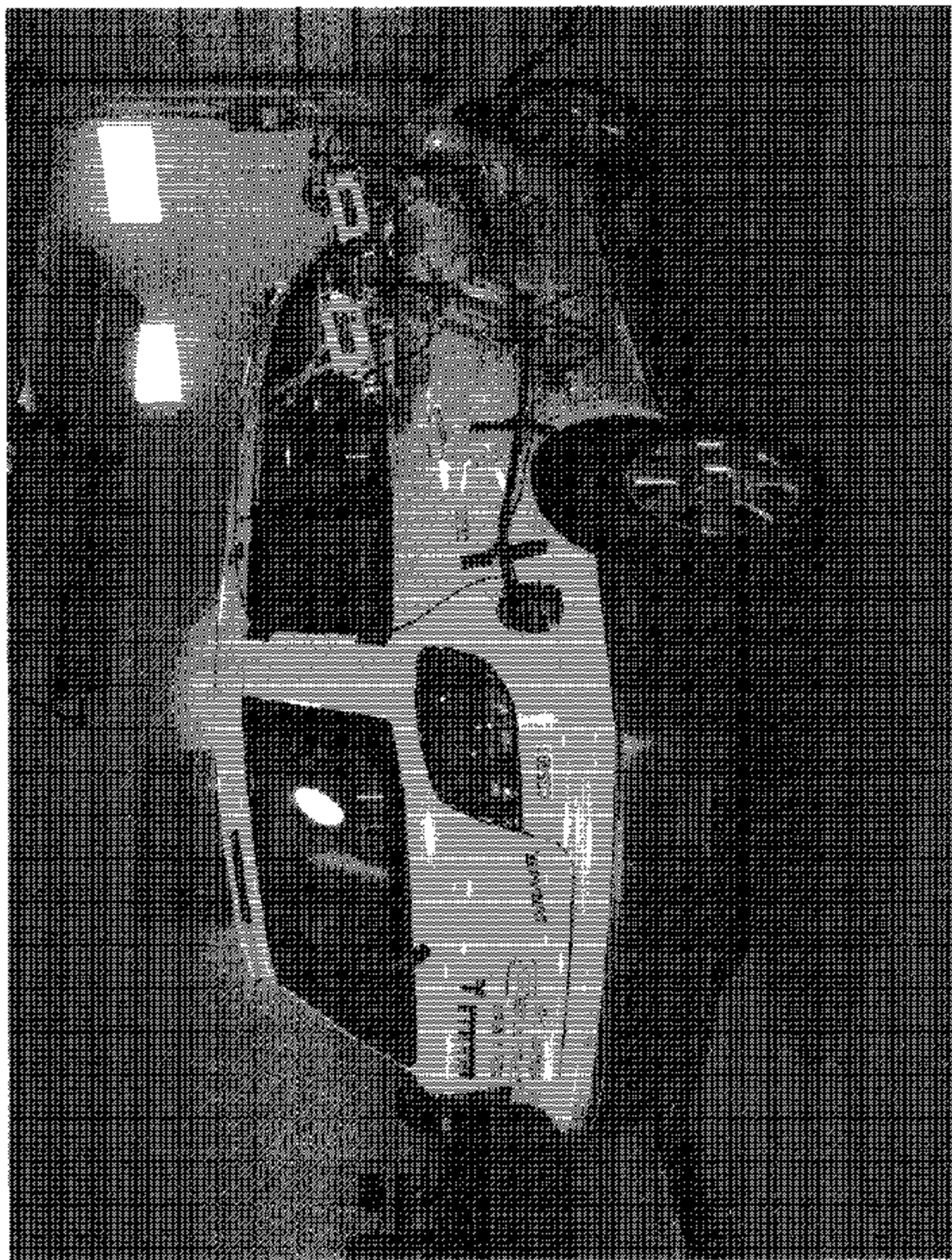


Figure A-14 POST-TEST RIGHT REAR VIEW OF TEST VEHICLE

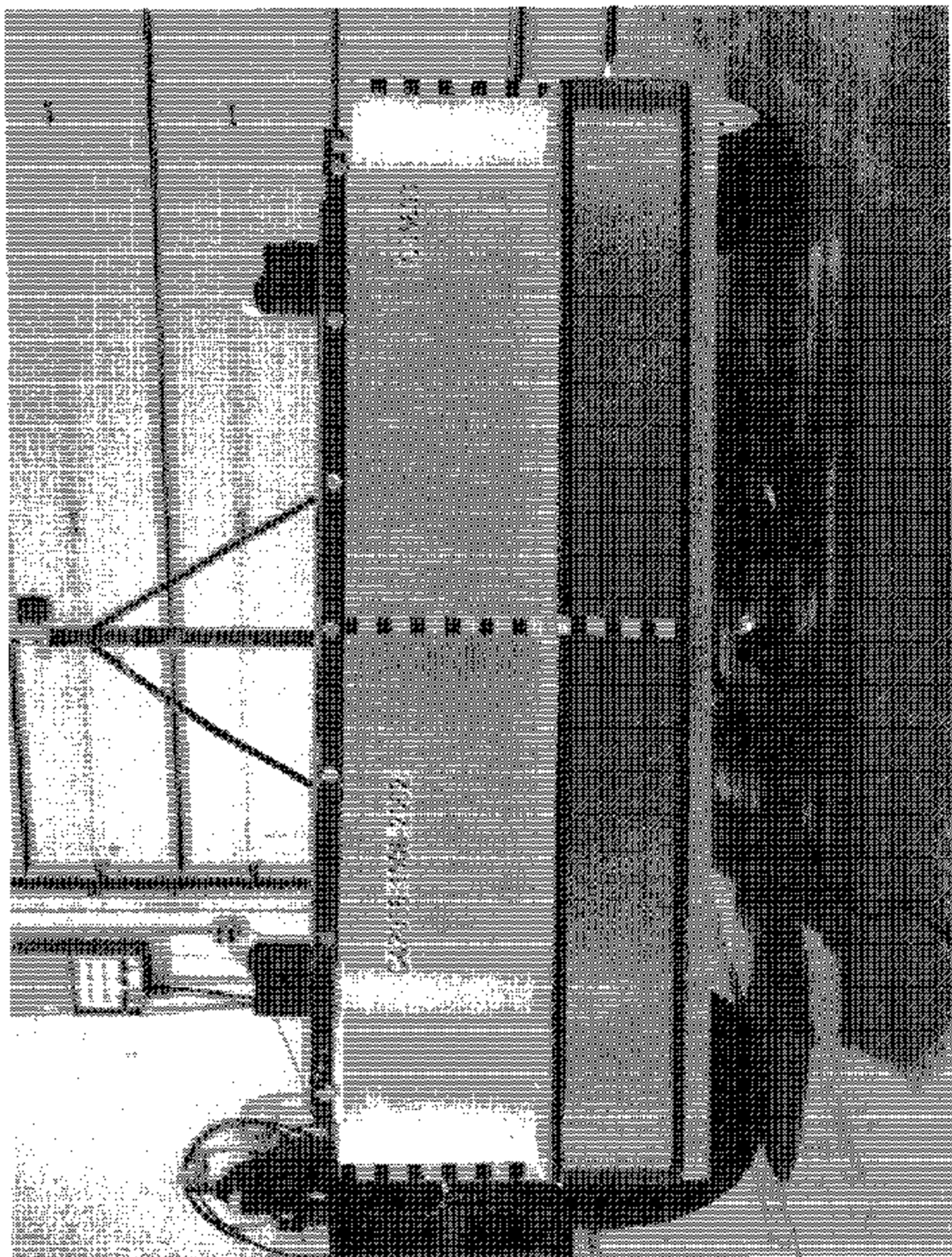


Figure A-15 PRE-TEST FRONTAL VIEW OF IMPACTOR FACE

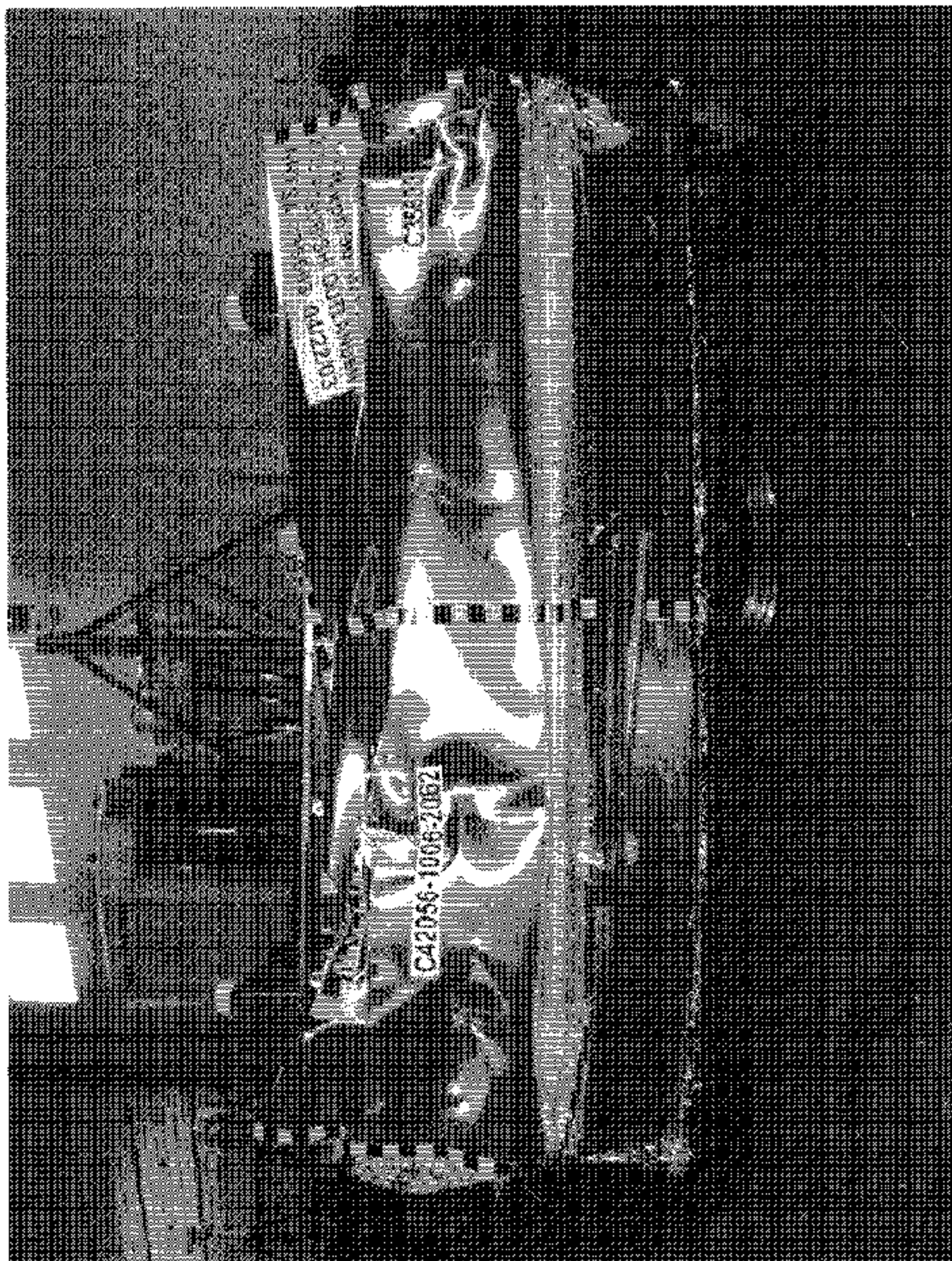


Figure A-16 POST-TEST FRONTAL VIEW OF IMPACTOR FACE

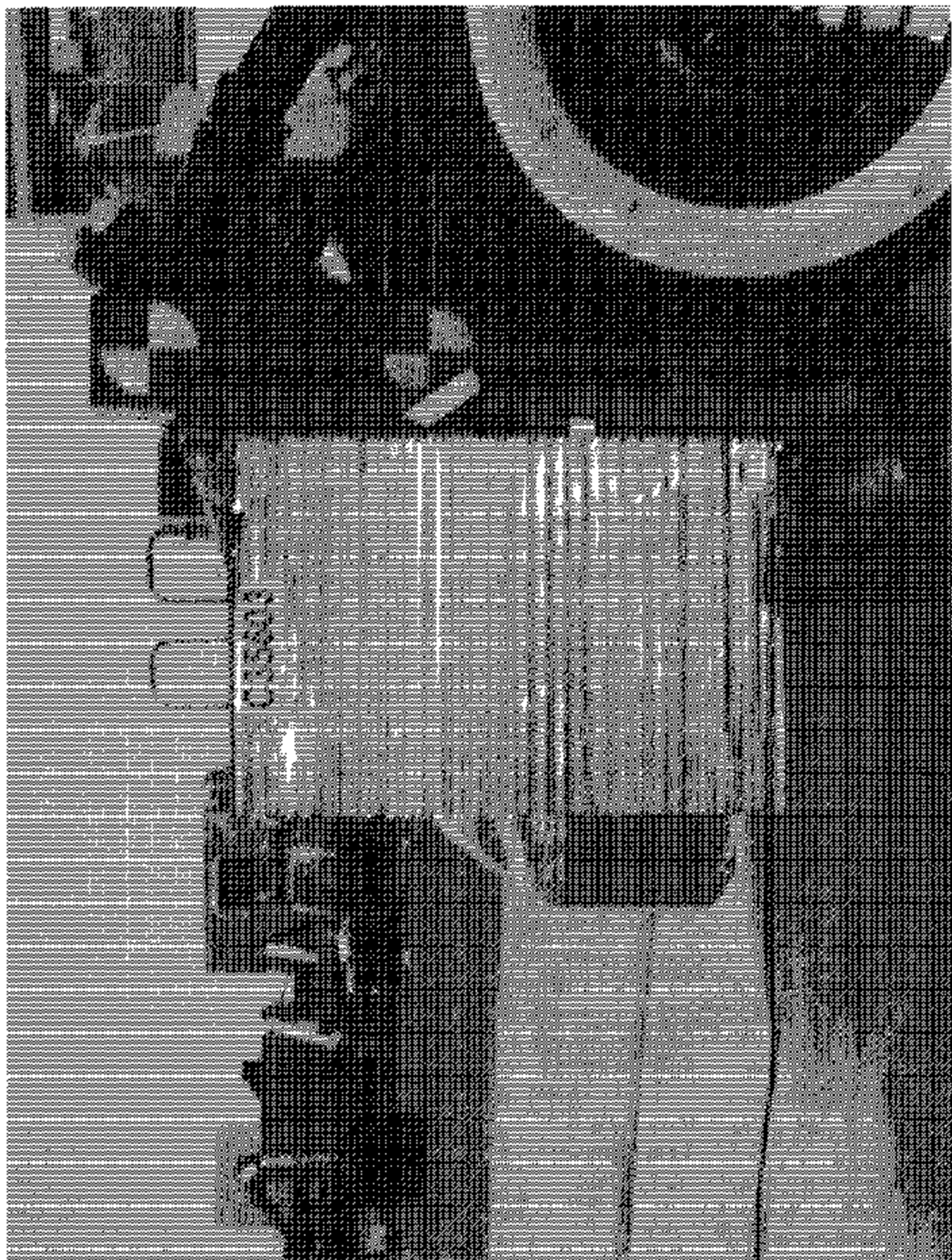


Figure A-17 1905-TEST LEFT SIDE VIEW OF IMPACTOR FACE

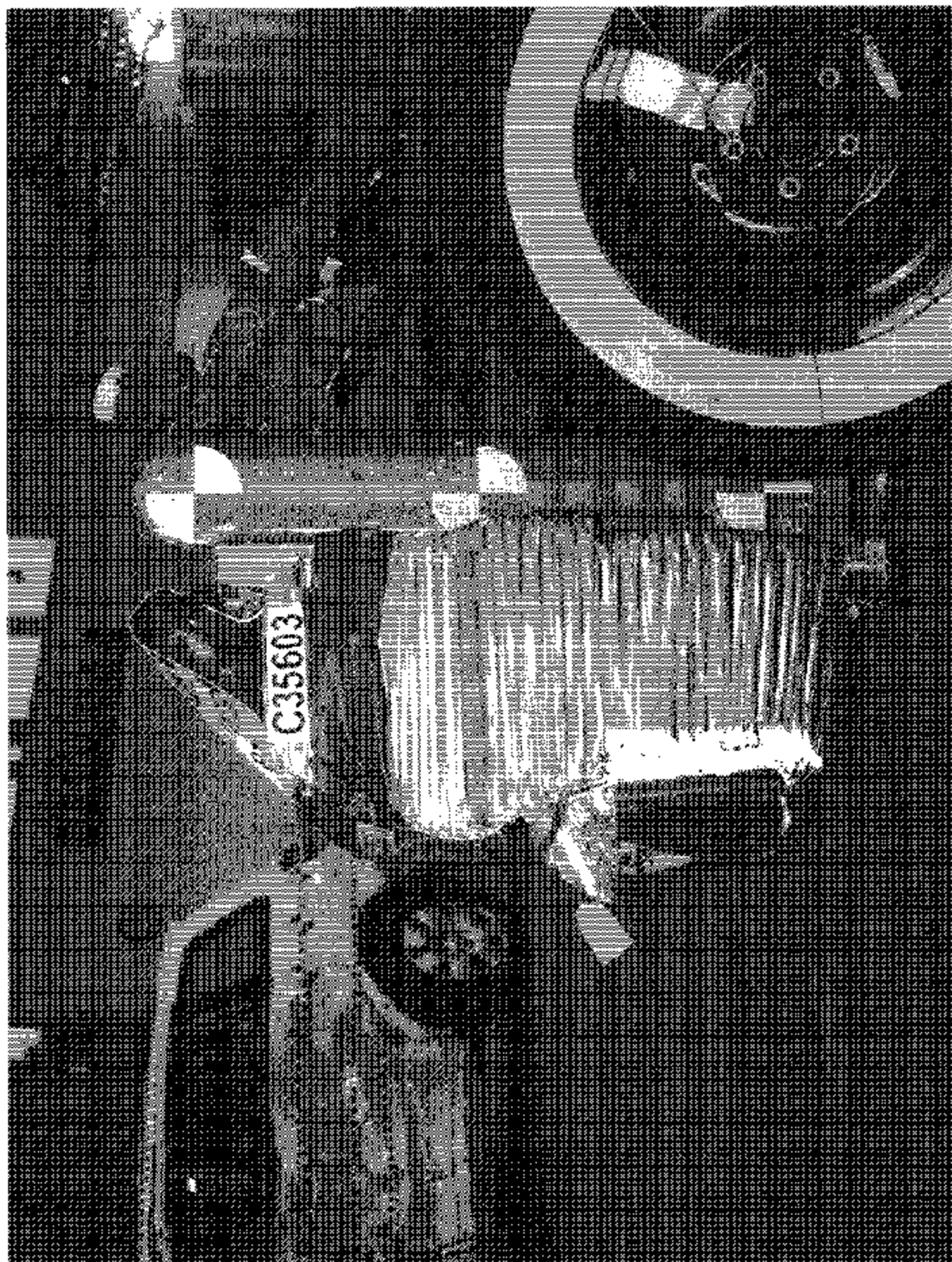


Figure A-18 (US)-TEST LEFT SIDE VIEW OF IMPACTOR FACE

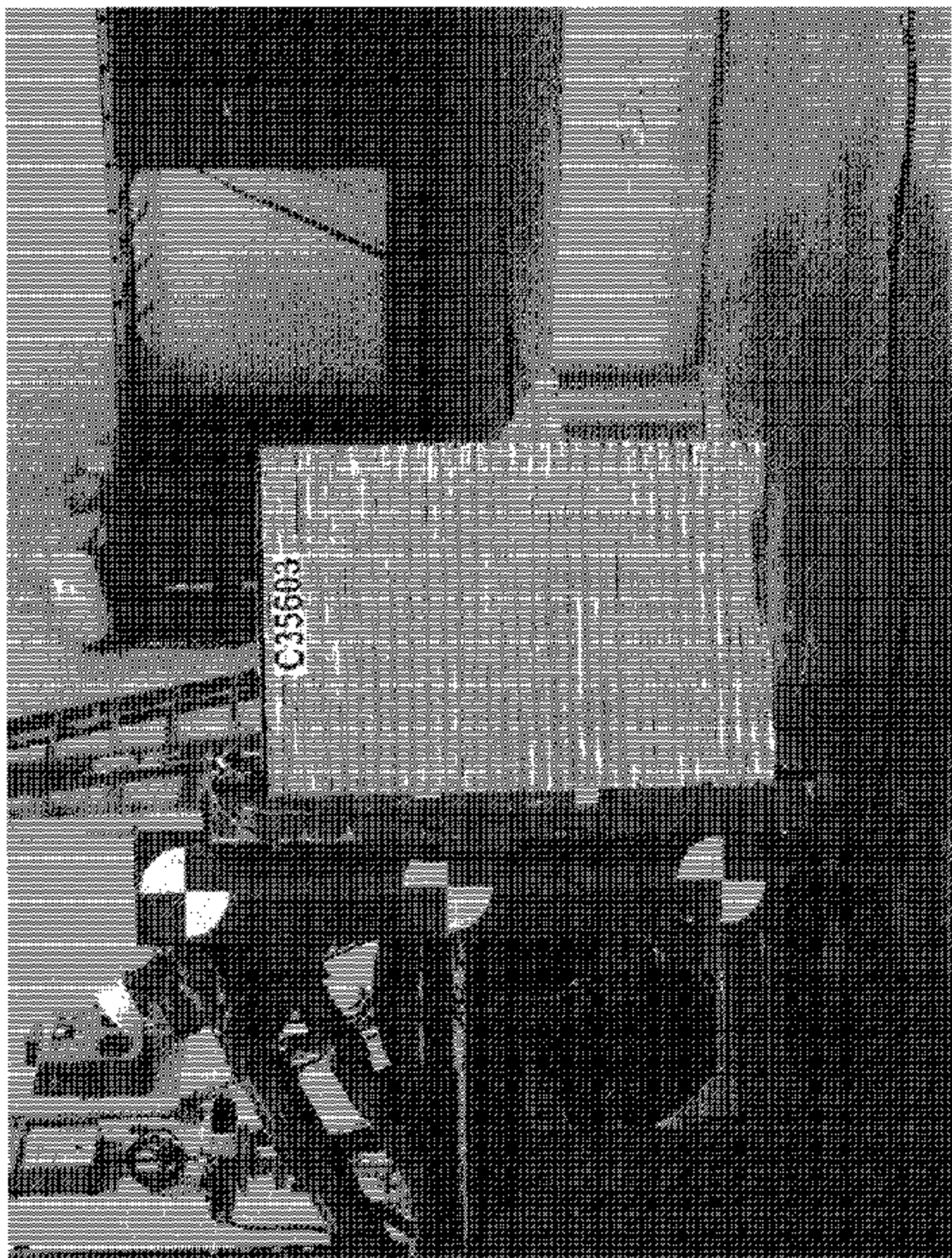


Figure A-19 PRE-TEST RIGHT SIDE VIEW OF IMPACTOR FACE

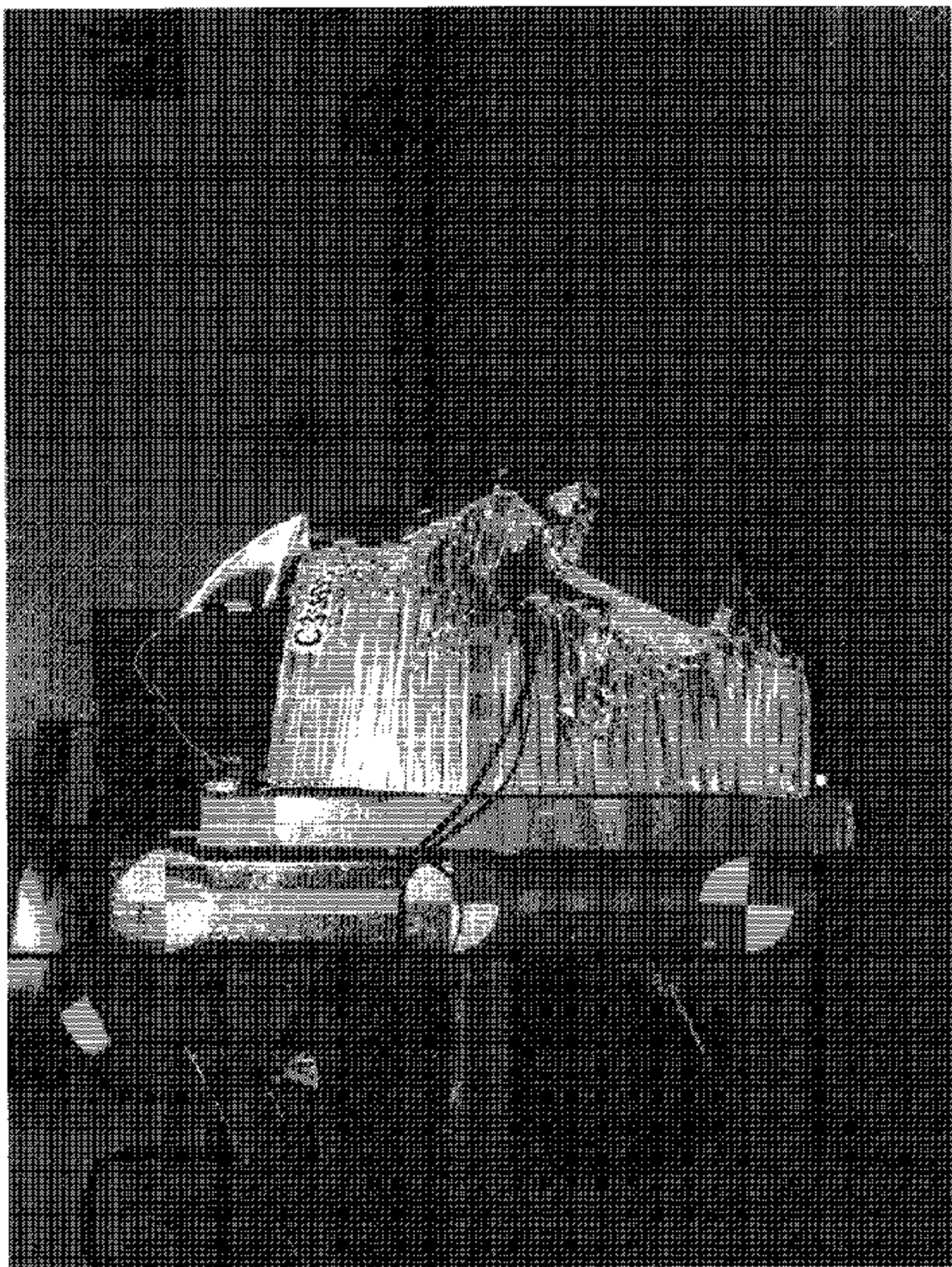


Figure A-20 POST-TEST RIGHT SIDE VIEW OF IMPACTOR FACE

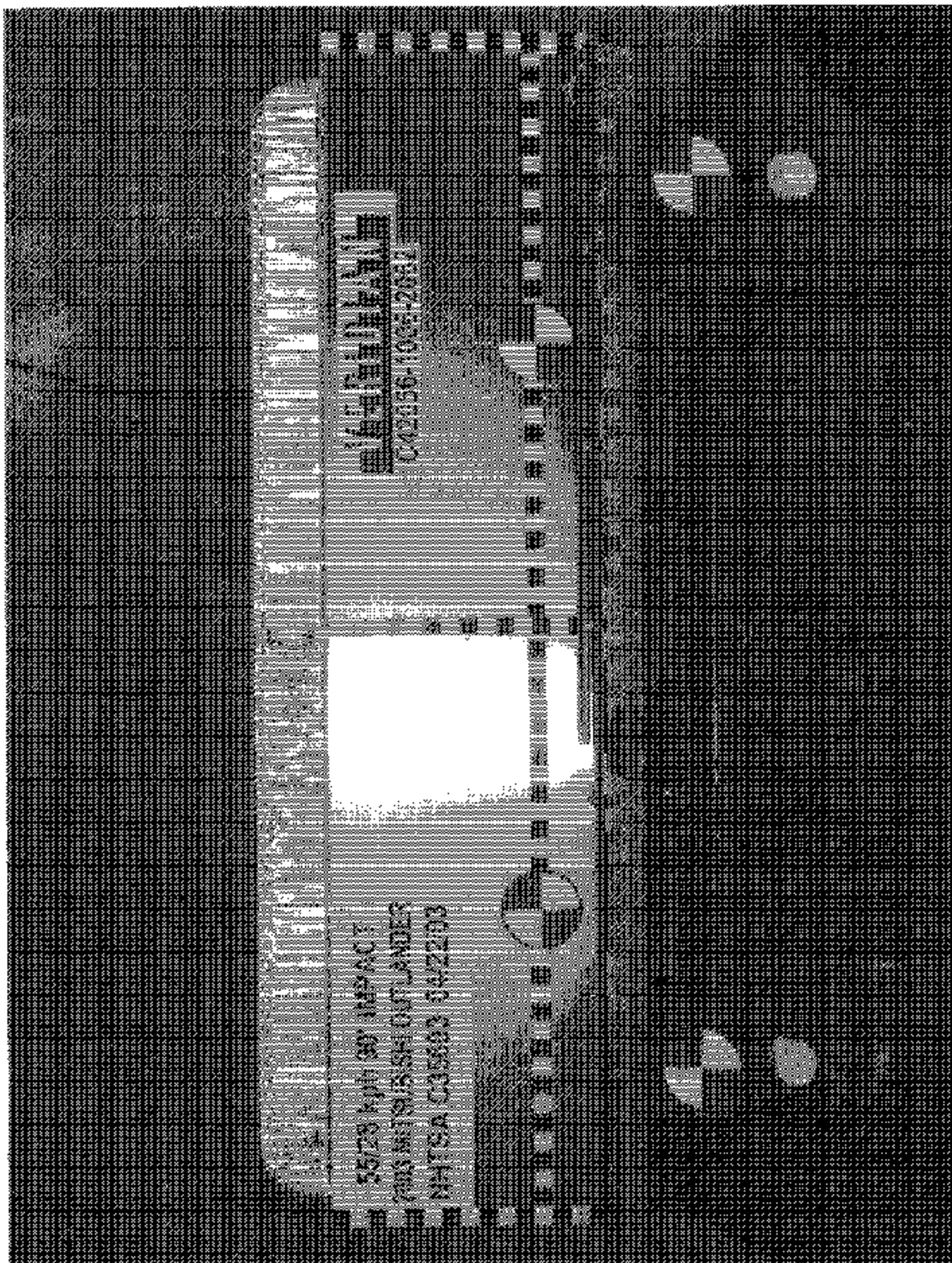


FIGURE A-21 PRE-TEST TOP VIEW OF IMPACTOR FACE

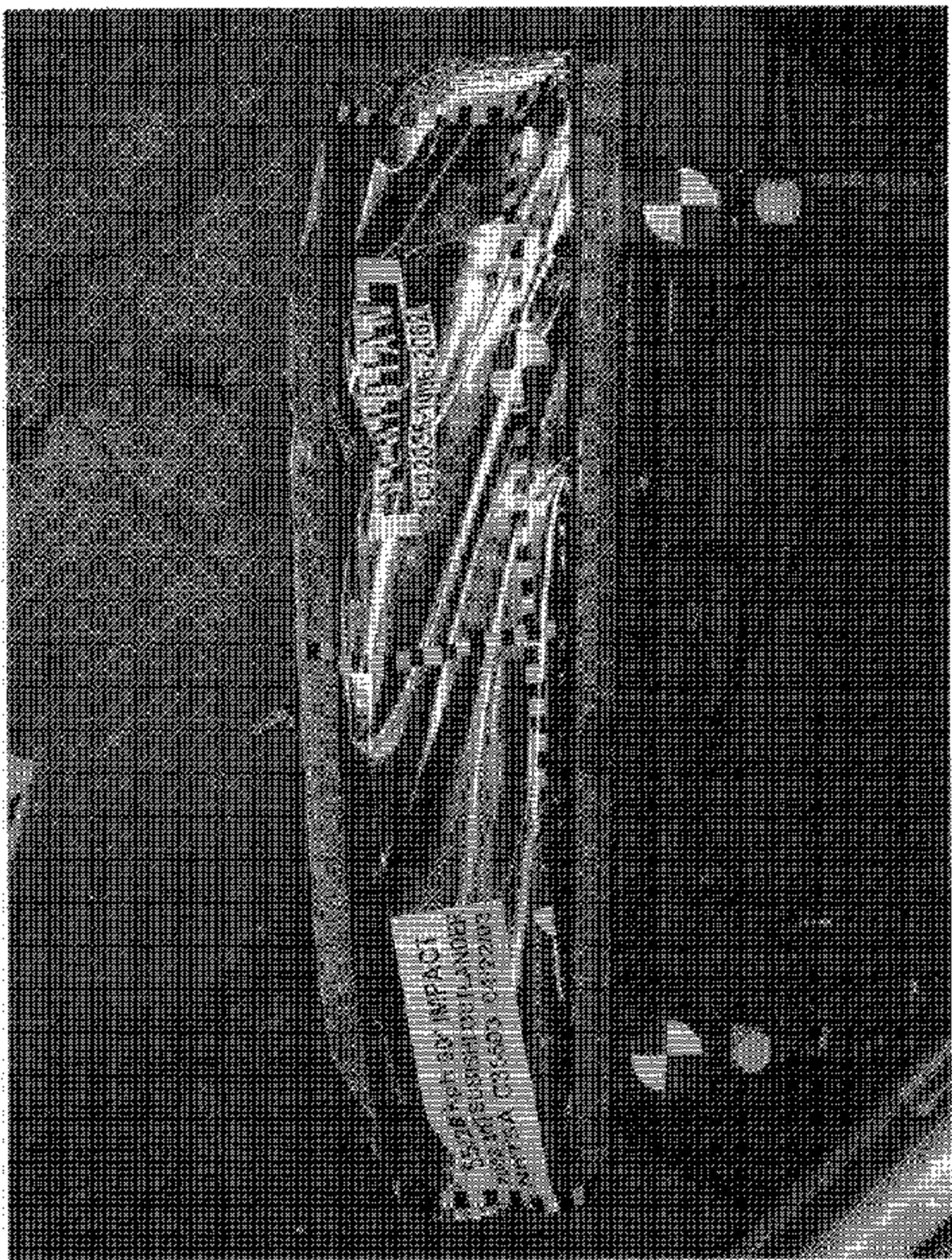


Figure A-23 POST-TEST TOP VIEW OF IMPACTOR FACE

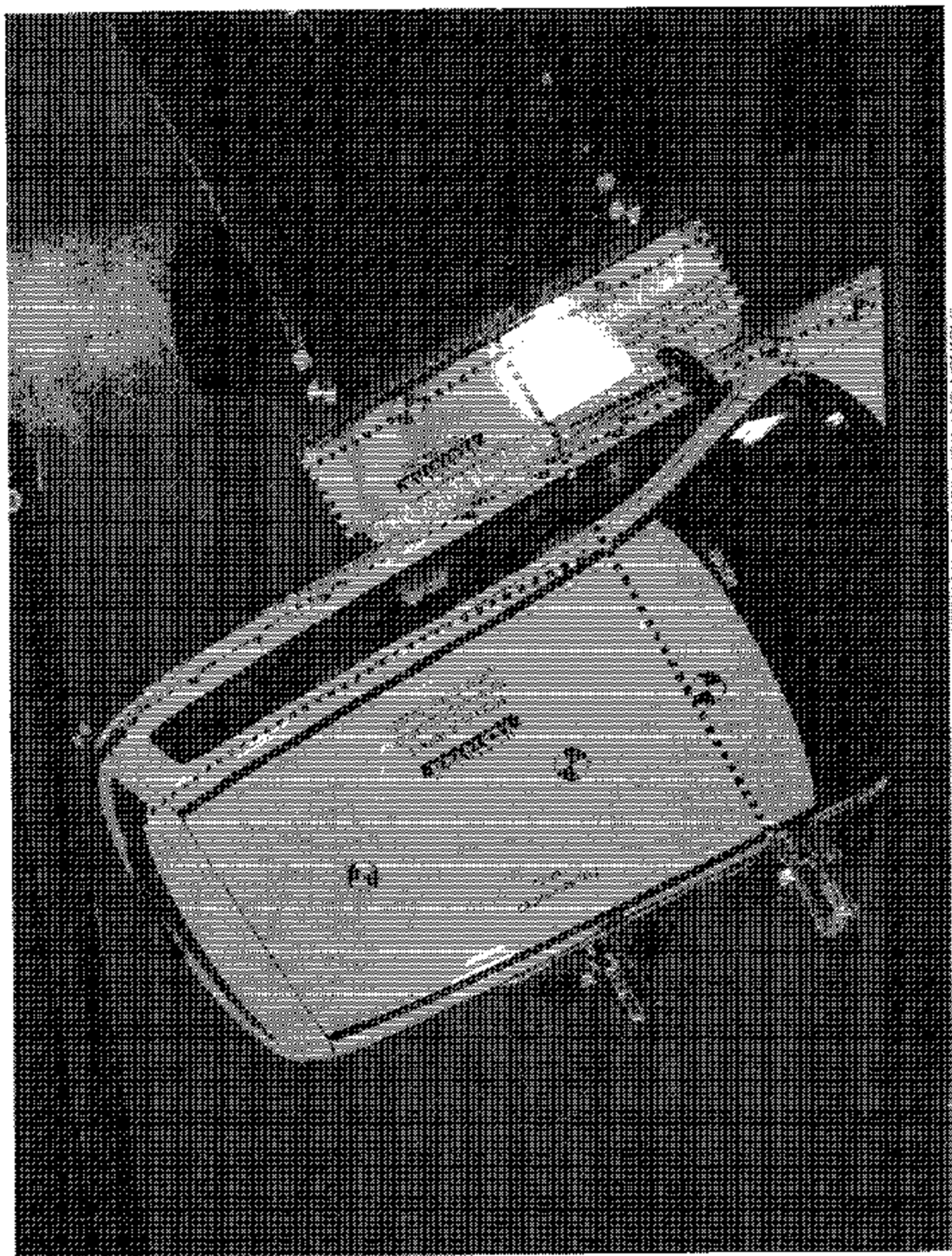


Figure A-23 PRE-TEST OVERHEAD VIEW OF ALIGNED MDB AND VEHICLE

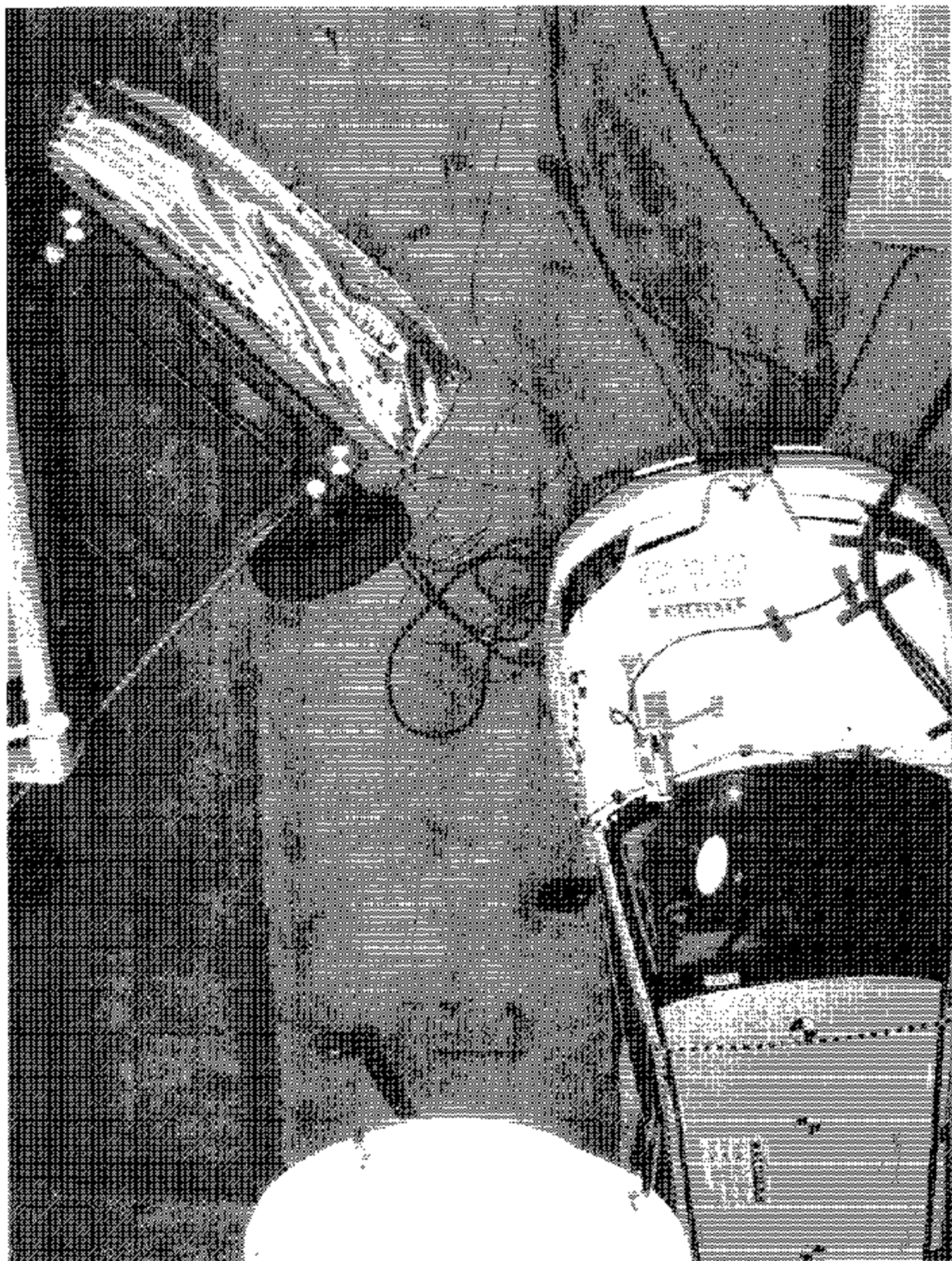


Figure A-24 PRIEST TEST OVERHEAD VIEW OF MDD AND VEHICLE



Figure A-25 PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID II3

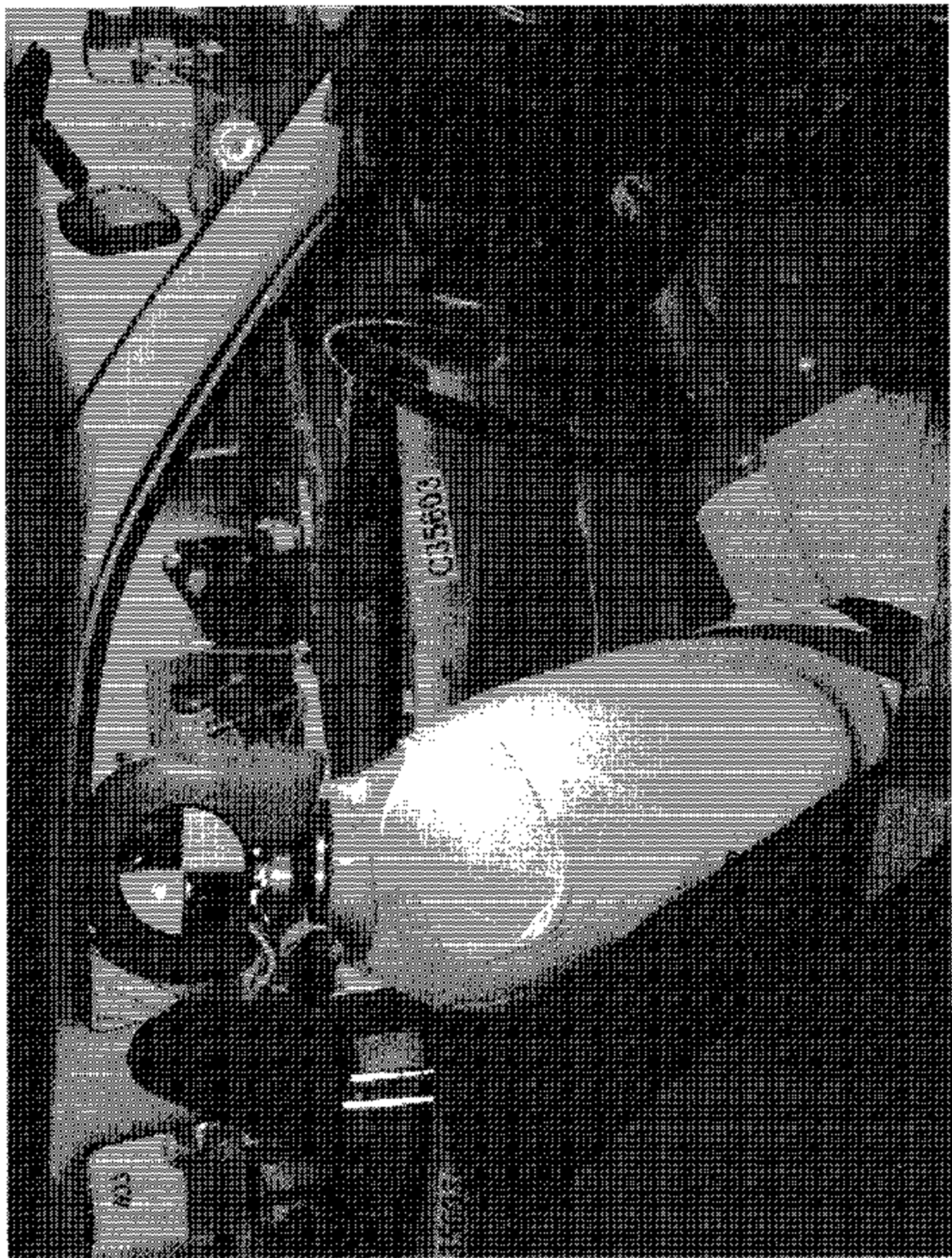


Figure A-26 POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF FRONT SID HS



Figure A-27 PRE-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SEAT IS



Figure A-28 POST-TEST RIGHT OCCUPANT COMPARTMENT VIEW OF REAR SID H3

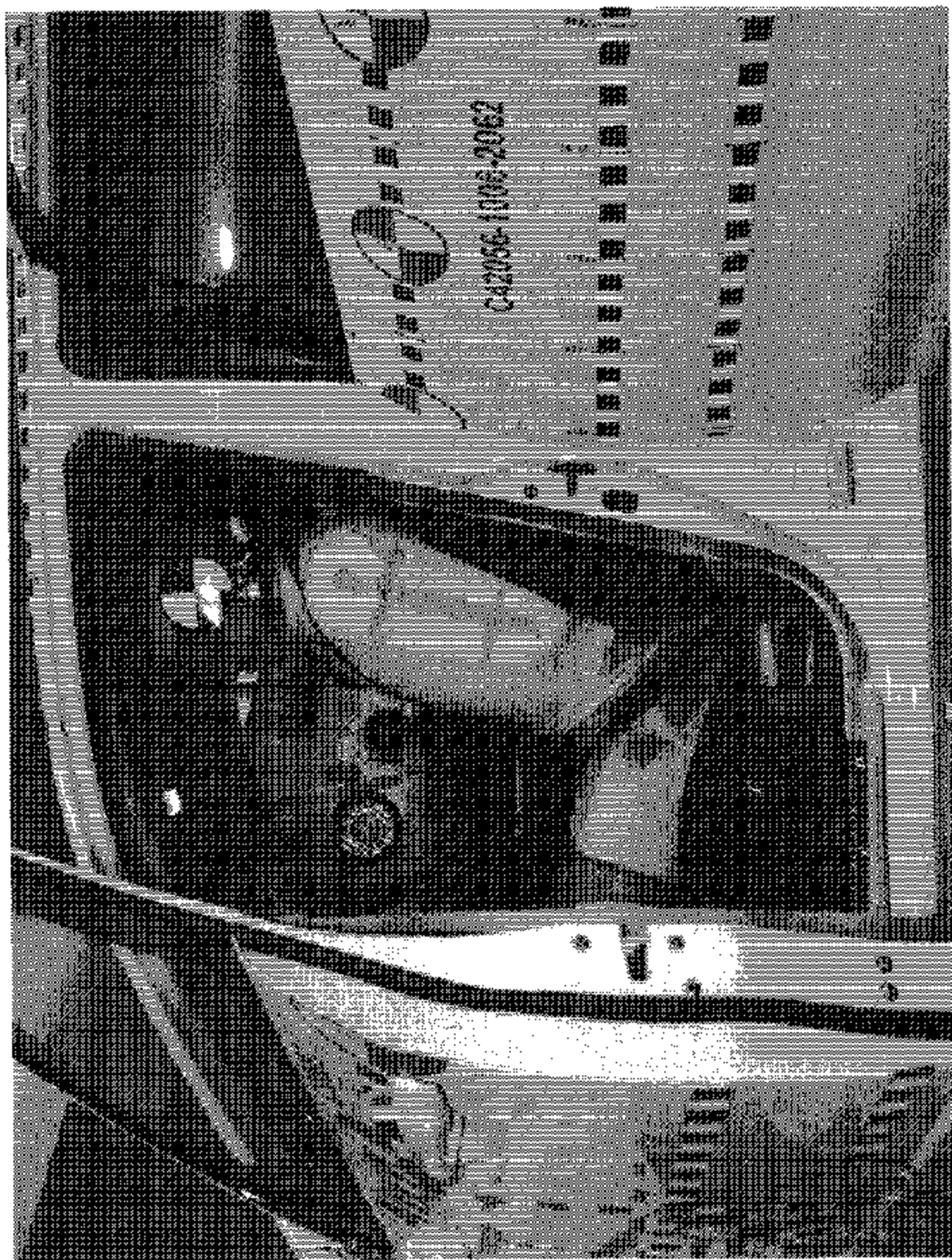


Figure A-29 PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF FRONT SIDE II

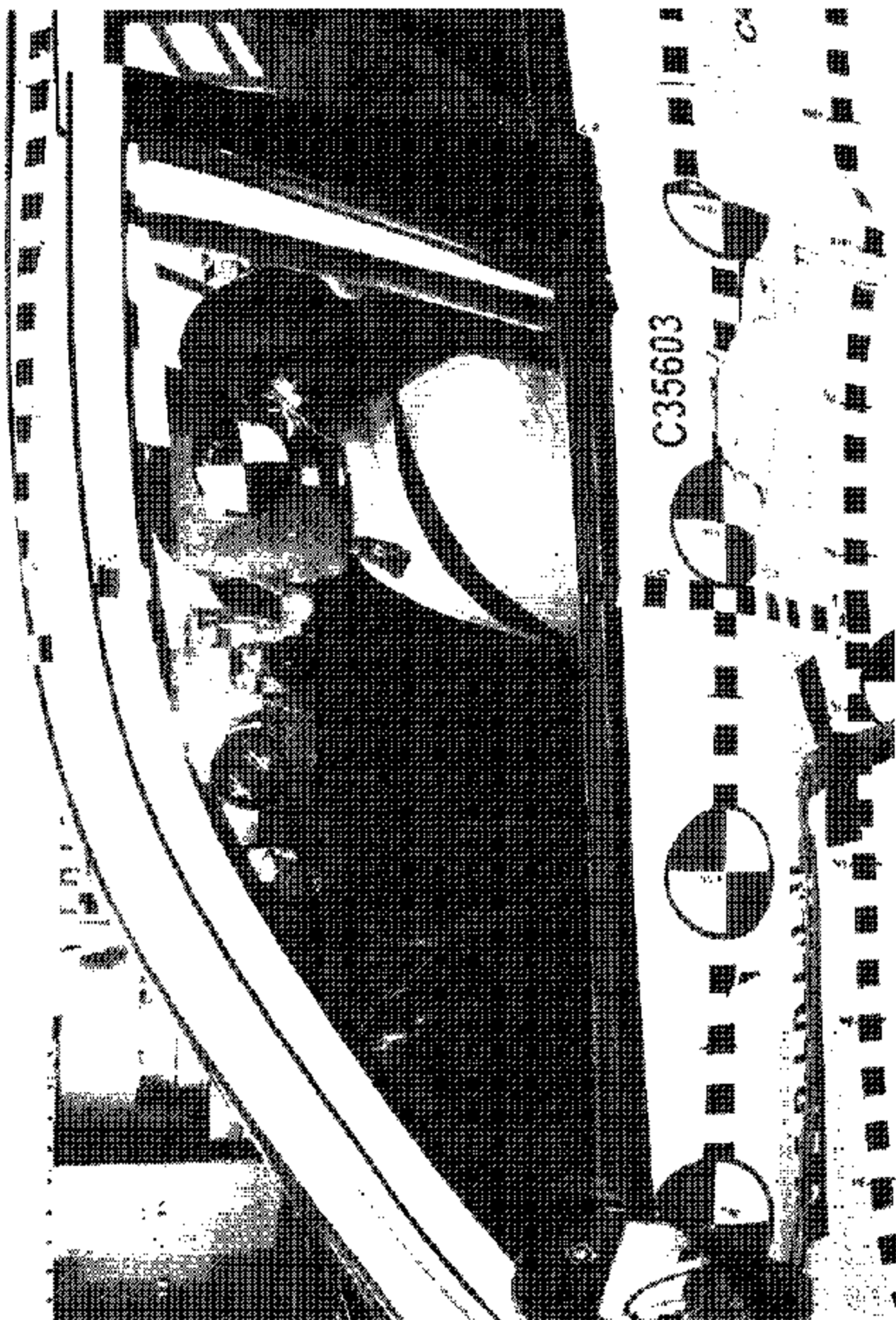


Figure 3. GROUND PENETRATING RADAR COMPARTMENT VIEW OF TRENCH

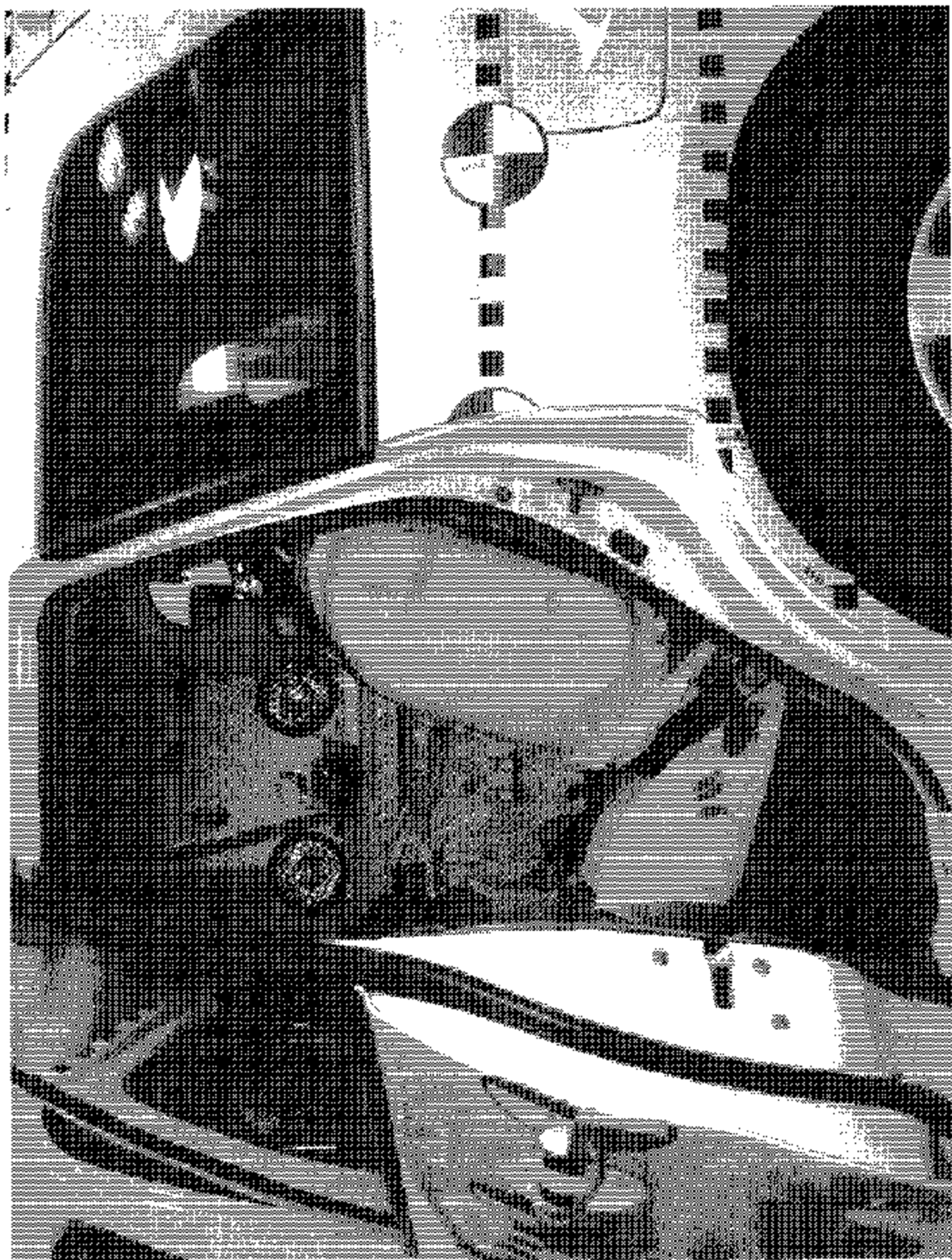


Figure A-31 PRE-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR SIDE IN

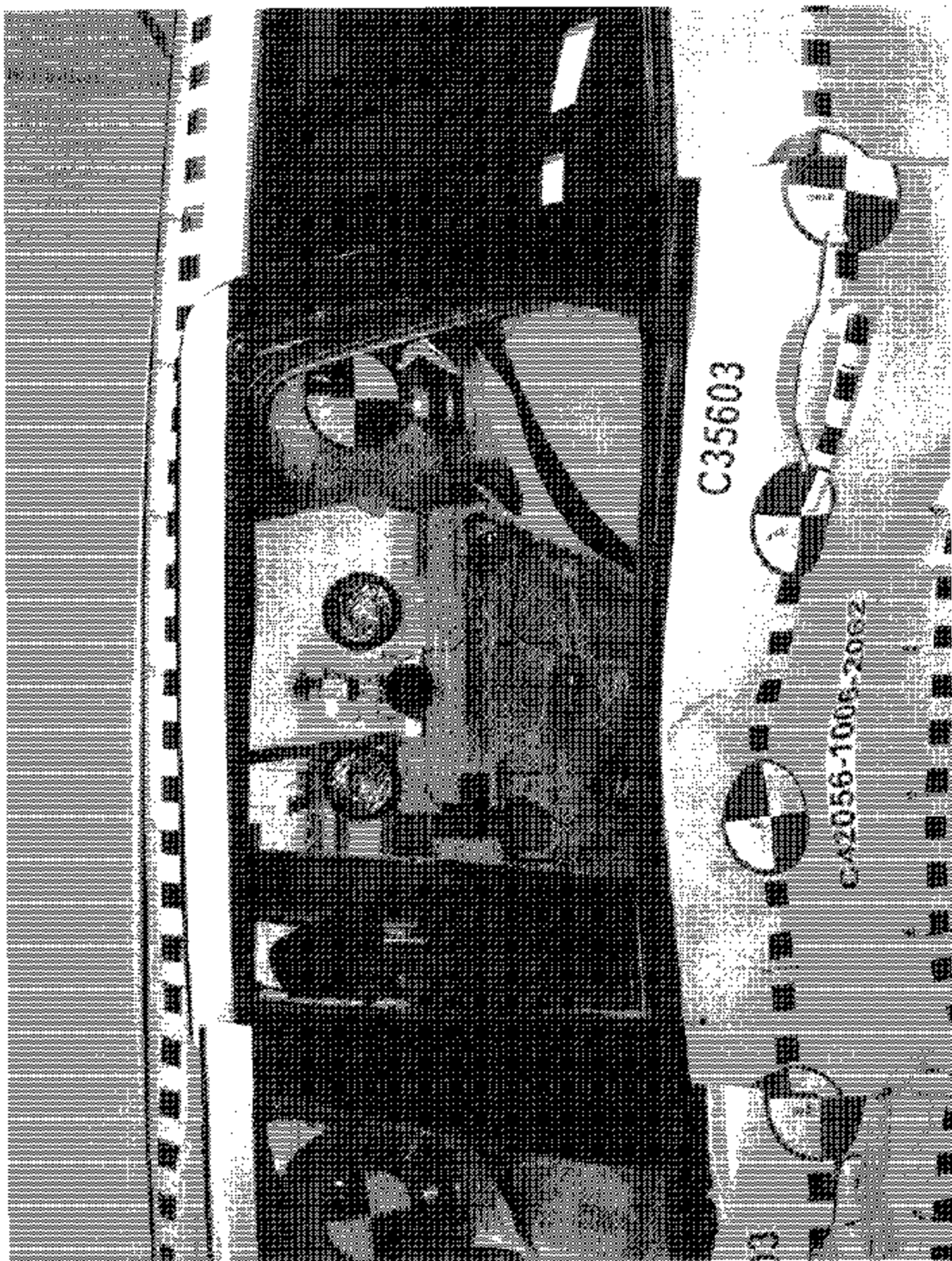


Figure A-32 POST-TEST LEFT OCCUPANT COMPARTMENT VIEW OF REAR NID 113

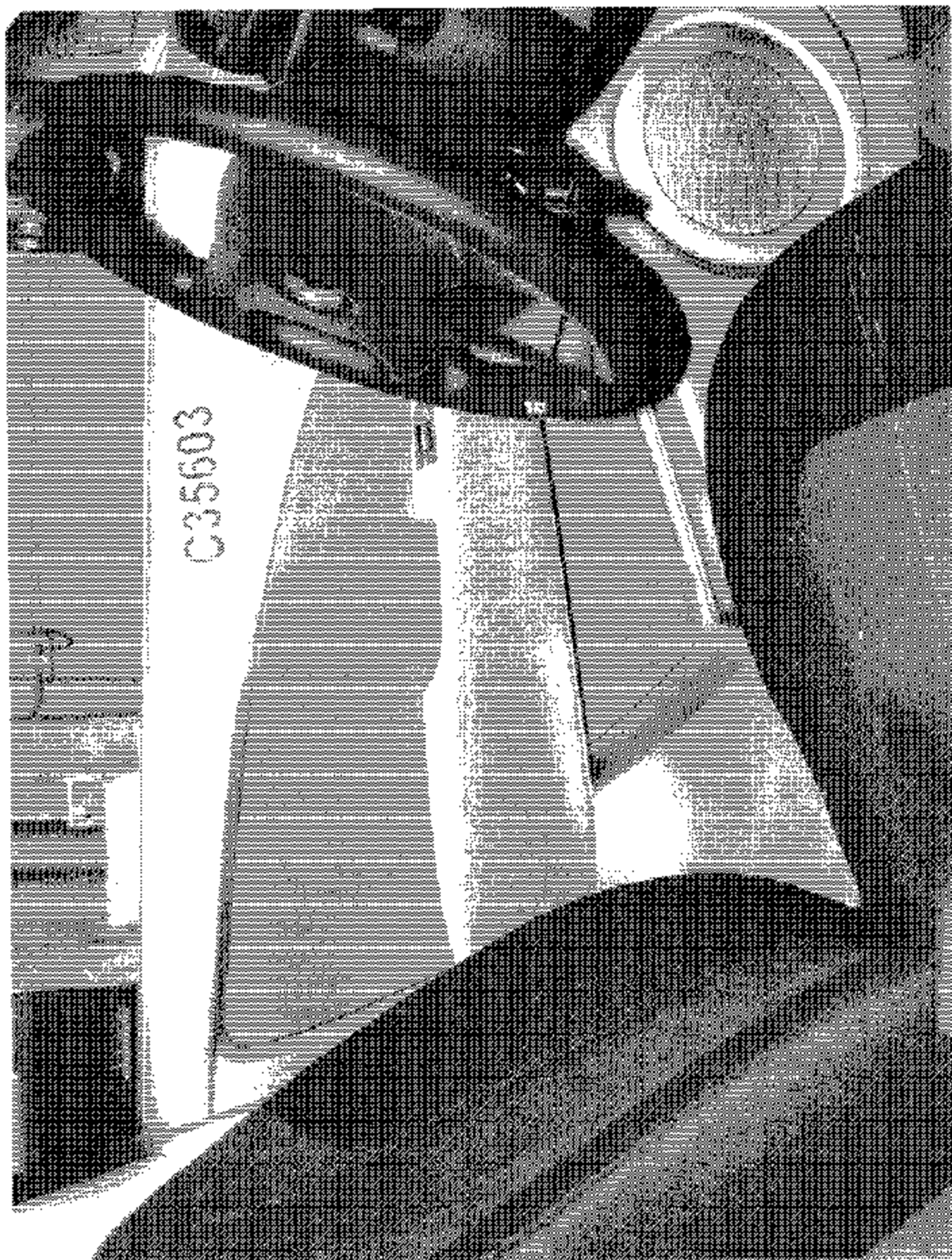


Figure A-35 PRE-TEST INTERIOR OF FRONT DOOR

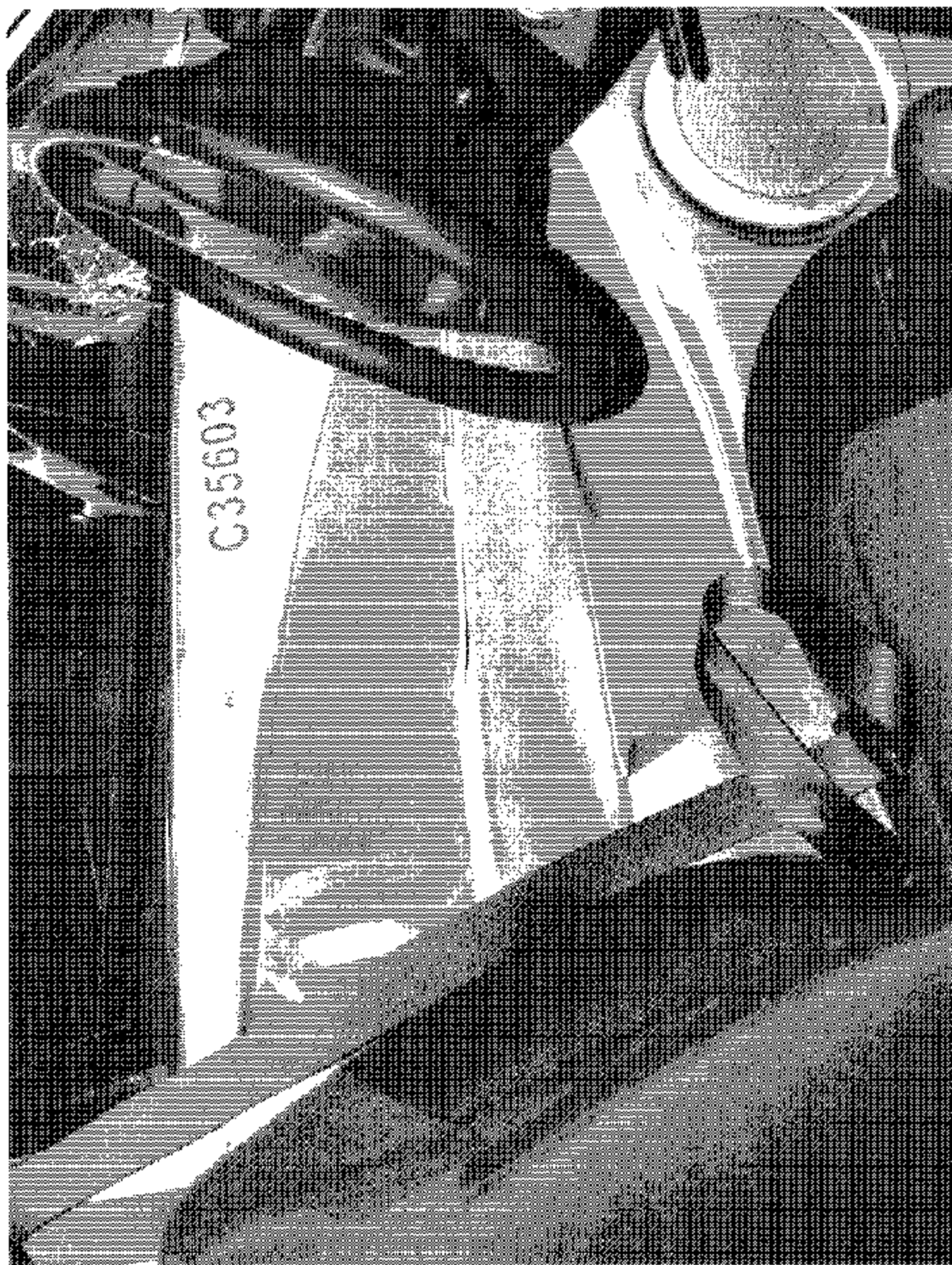


FIGURE A-34 POST-TEST INTERIOR OF FRONT DOOR SHOWING SIDED IMPACT LOCATIONS

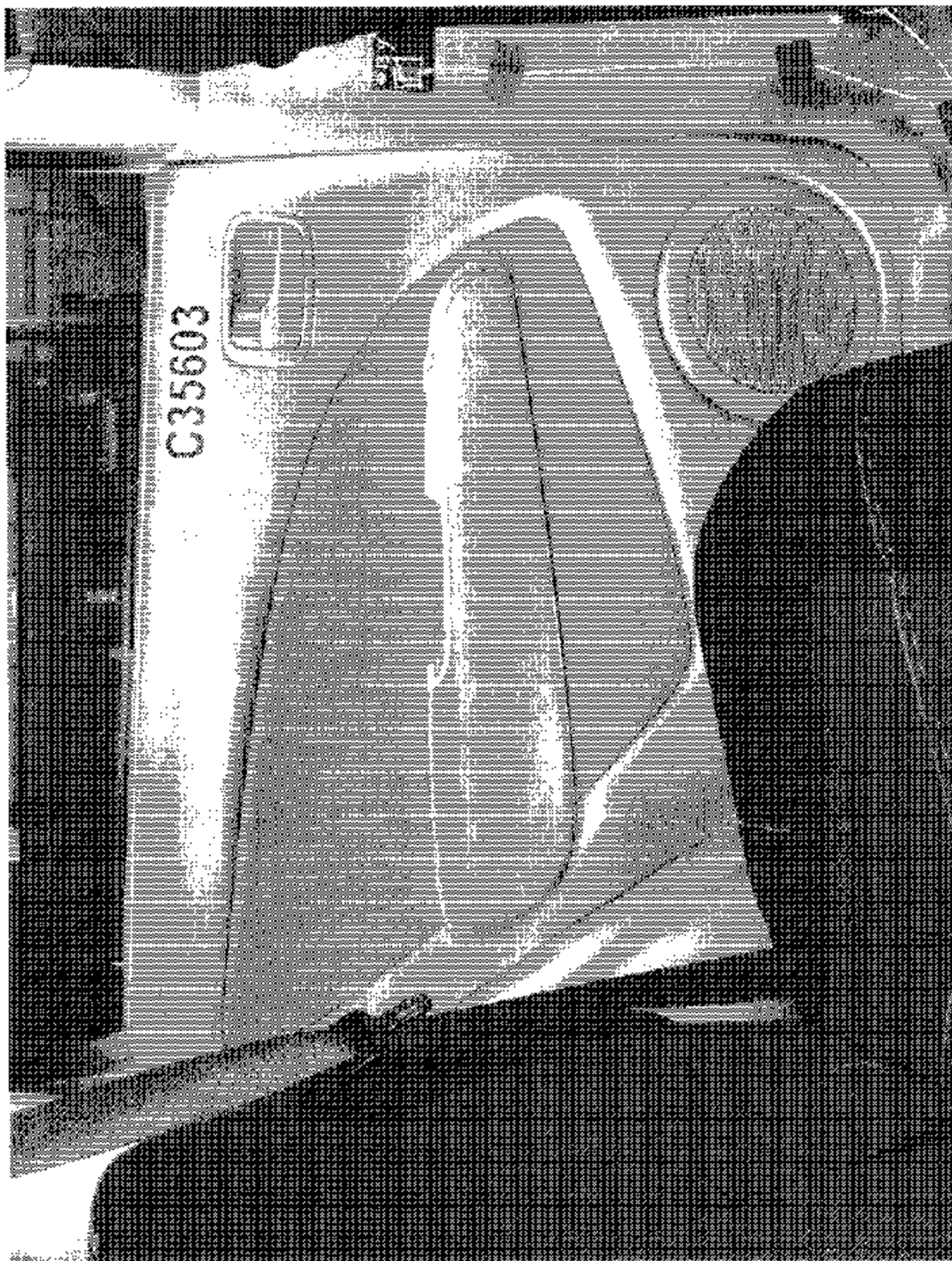


Figure A-35 PRE-TEST INTERIOR OF REAR DOOR

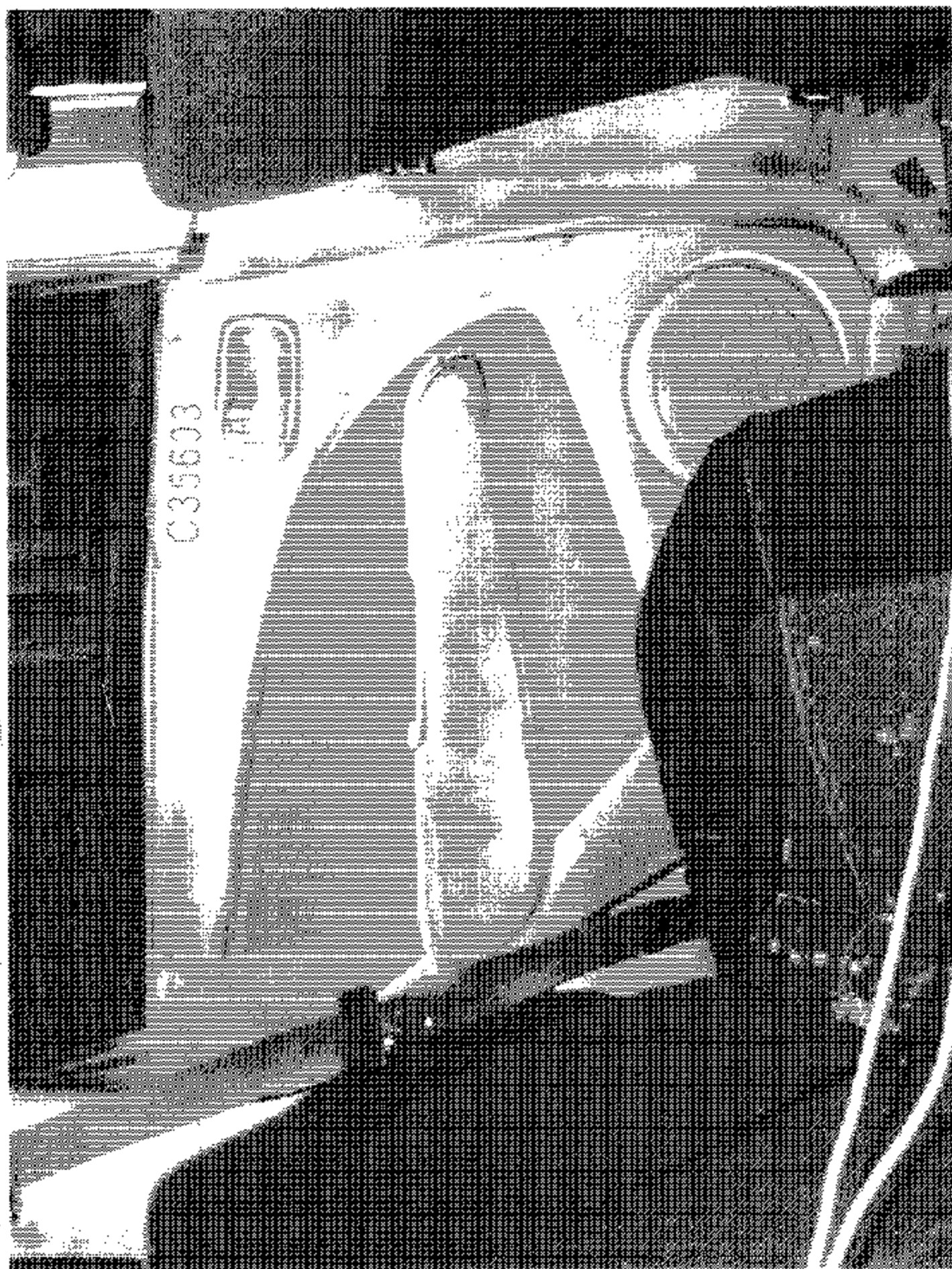


Figure A-16 POST-TEST INTERIOR OF REAR DOOR SHOWING SIDE IMPACT LOCATIONS

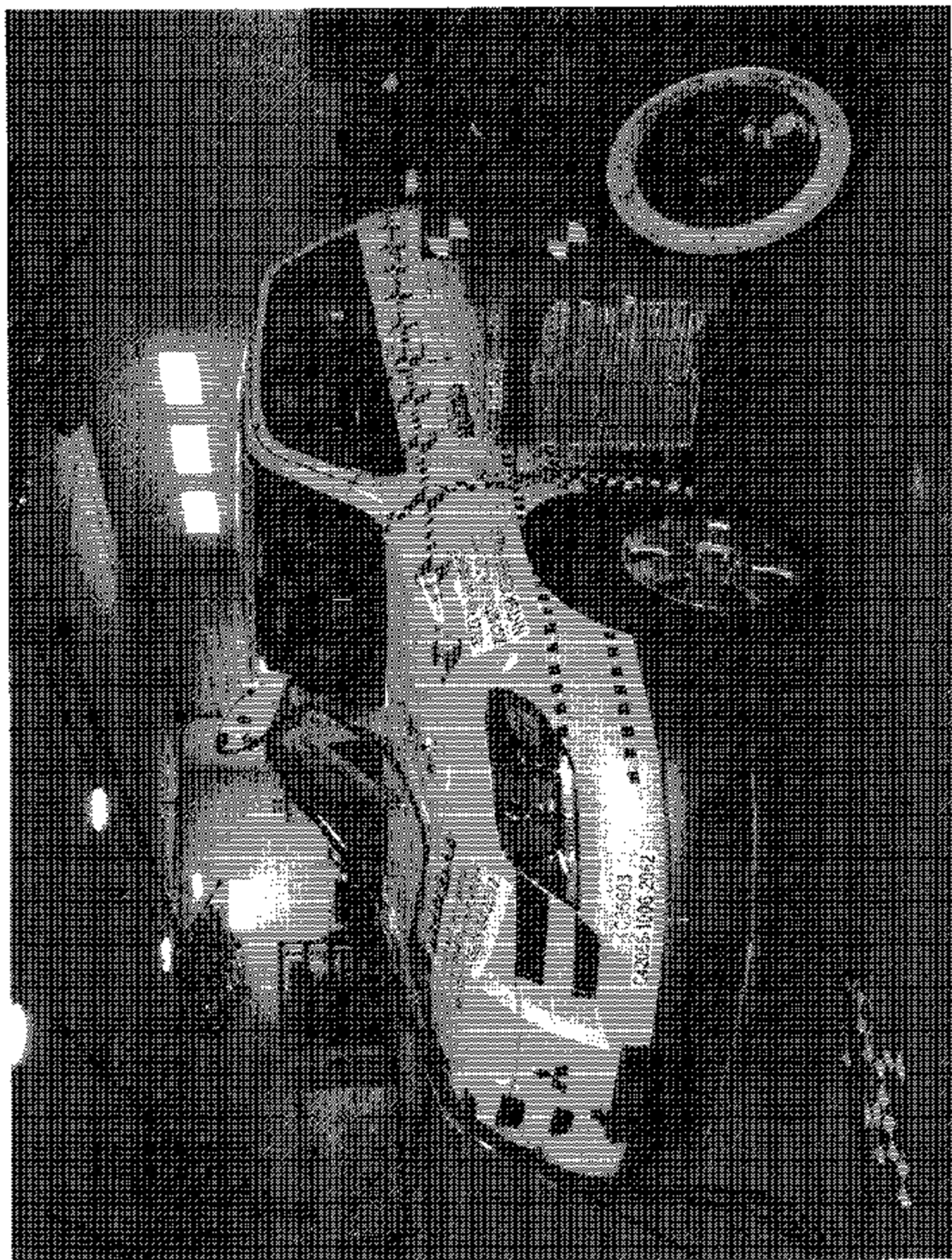


Figure A-37 PRE-TEST LEFT SIDE VIEW OF MVB WITH IMPACTOR FACE IN POSITION

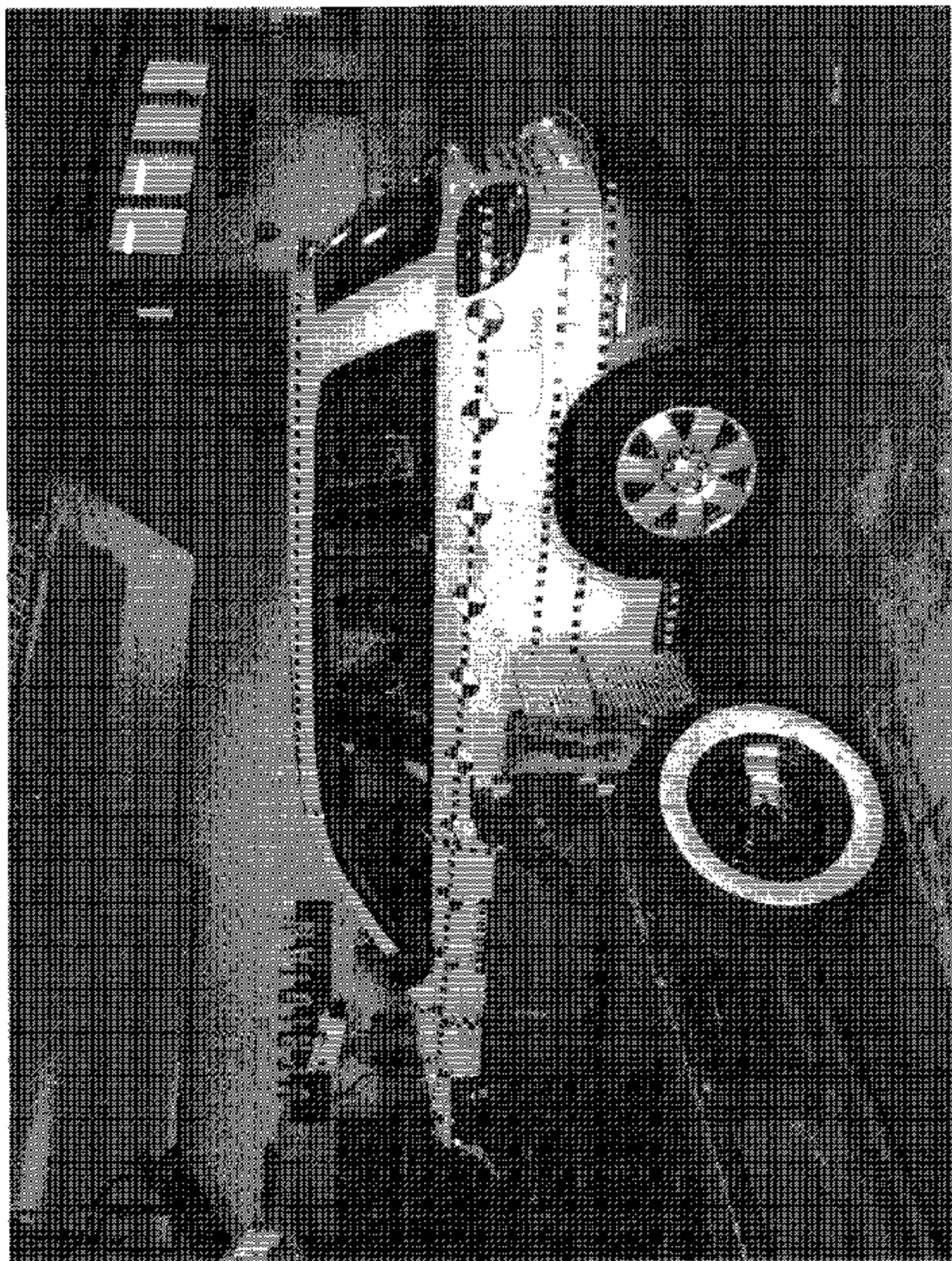


Figure A-18 PRE-TEST RIGHT SIDE VIEW OF NDR WITH IMPACTOR FACE IN POSITION

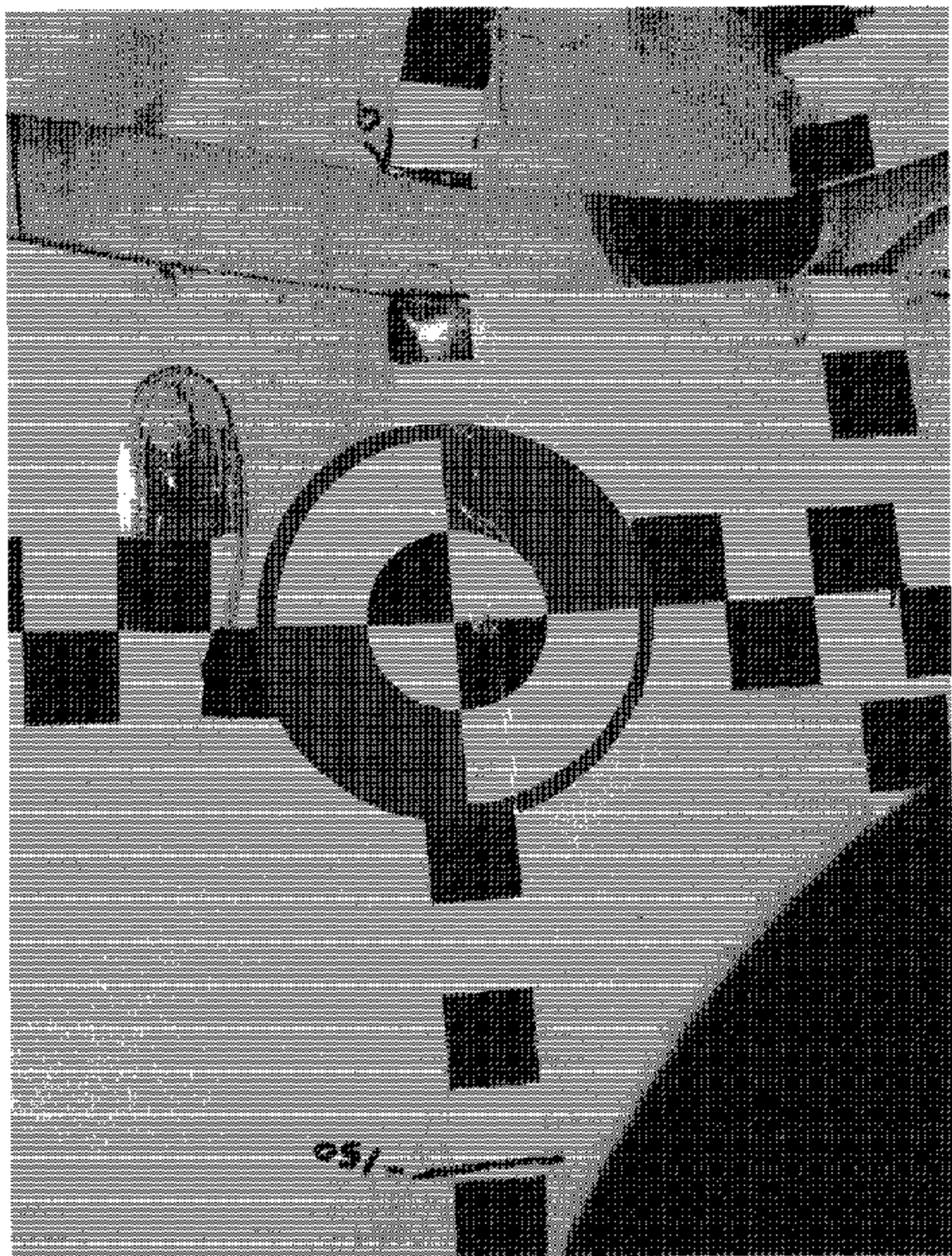


Figure A-39 POST-TEST CLOSE-UP VIEW OF IMPACT POINT TARGET

MFD. BY MITSUBISHI MOTORS CORPORATION

GVWR 4145LBS/1880KG

GAWR 2315LBS/1050KG WITH P225/60R16

FR 16X6JJ RIMS AT 200KPa/29PSI

GAWR 2348LBS/1065KG WITH P225/60R16

RR 16X6JJ RIMS AT 200KPa/29PSI

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY AND THEFT
PREVENTION STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE.



JA4LX31G43U036058

VEHICLE TYPE:MPV

MU000414

JAPAN
SEP 2002

TIRES

COLD

TIRES

COLD

Figure A-40 CLOSE-UP VIEW OF VEHICLE'S CERTIFICATION LABEL

TIRE INFLATION PRESSURE
(CHECK WHEN TIRE COOL)

STANDARD INFLATION PRESSURE
FOR ALL LOAD

1ST SEAT : 2 PASSENGERS

2ND SEAT : 3 PASSENGERS

TOTAL : 5 PASSENGERS

LUGGAGE : 35kg (77lbs)

TOTAL WEIGHT : 375kg (827lbs)

TIRE SIZE

FRONT & REAR

P225/60R16

29PSI
{200kPa}

TEMPORARY TIRE SIZE

T135/90D16

60PSI {420kPa}

MR961383 F

Figure A-11 CLOSE-UP VIEW OF VEHICLE'S TIRE PLACARD LABEL

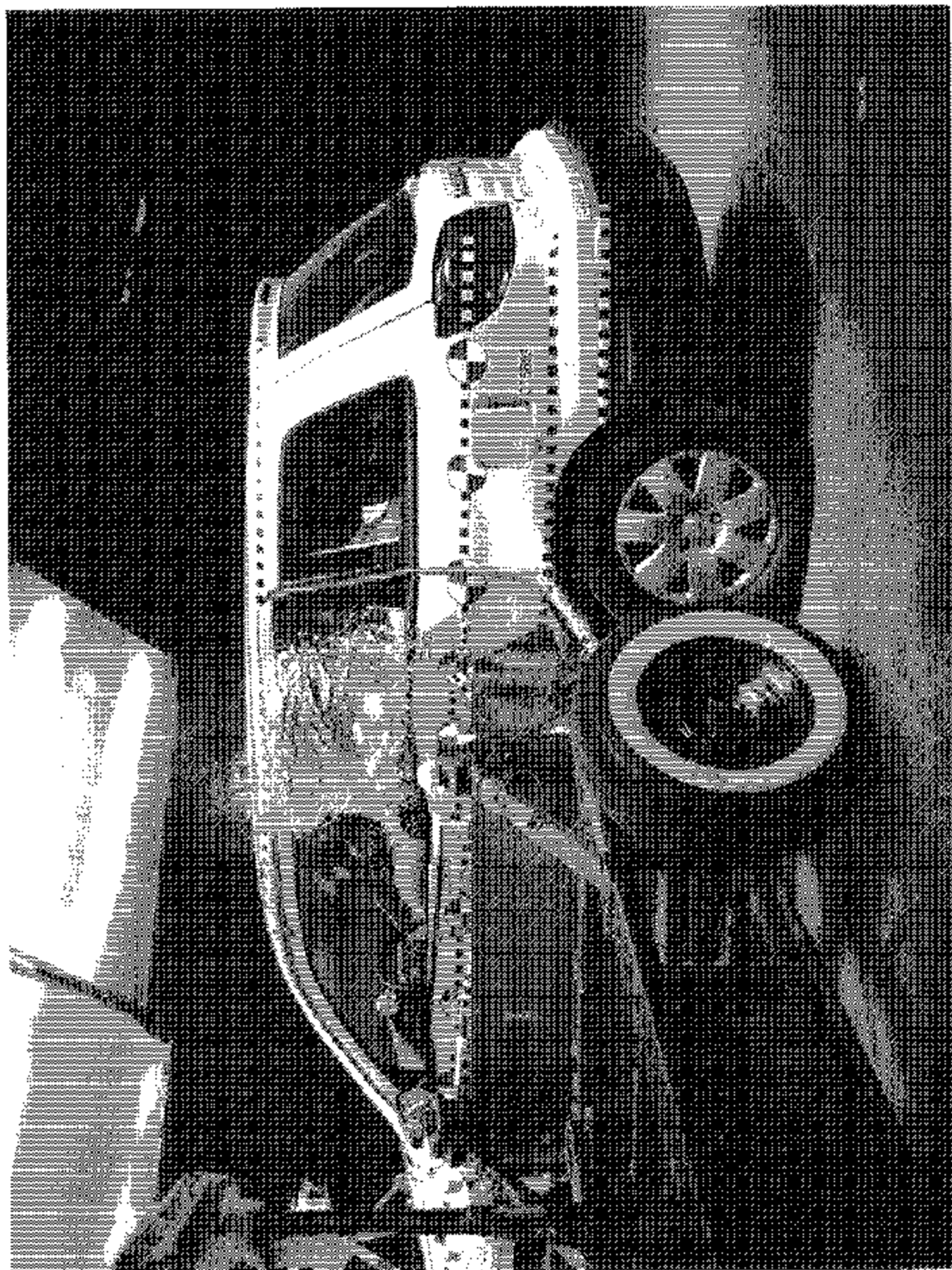


Figure A-42 IMPACT PHOTO

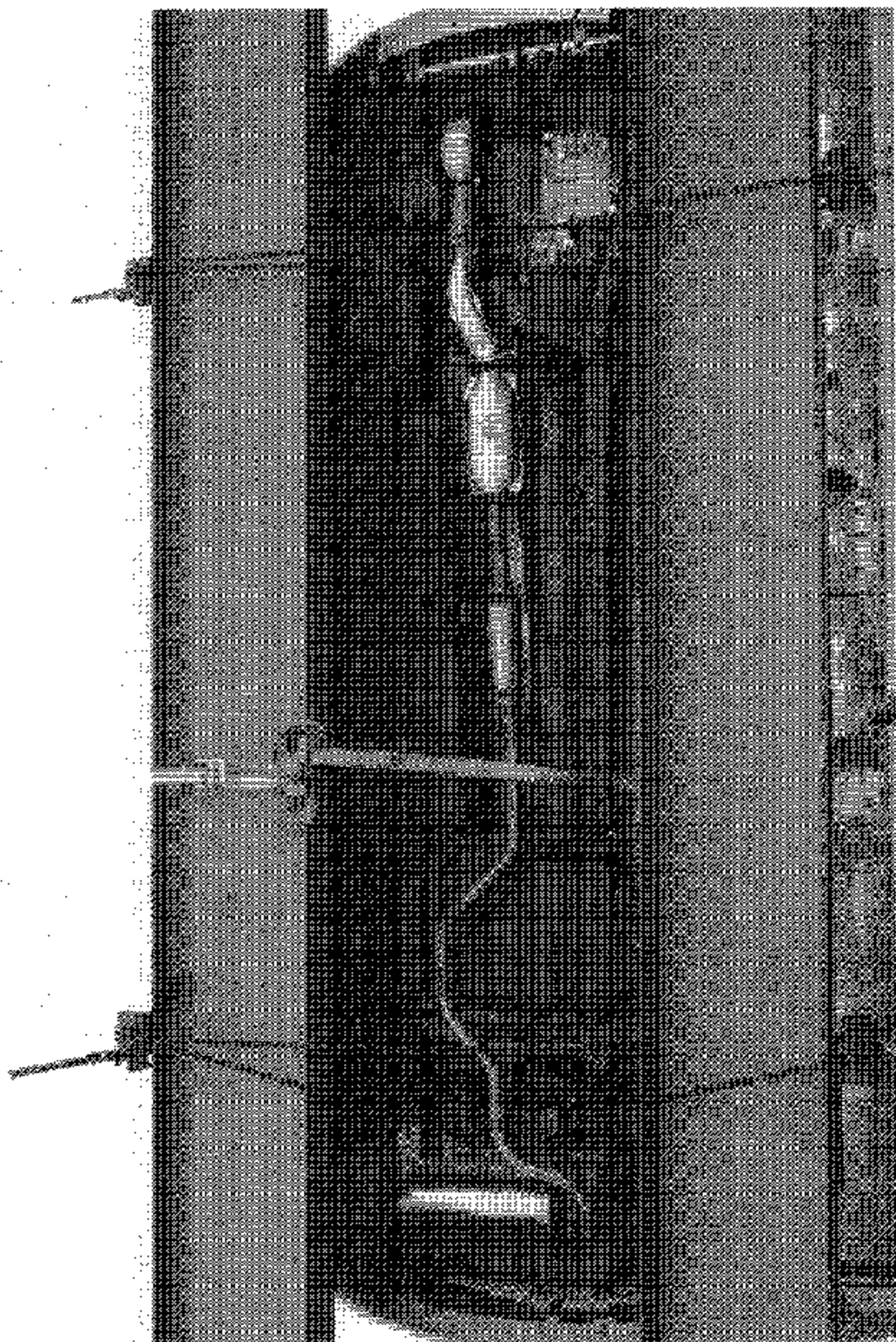


Figure A-43 ROLL OVER 90 DEGREES

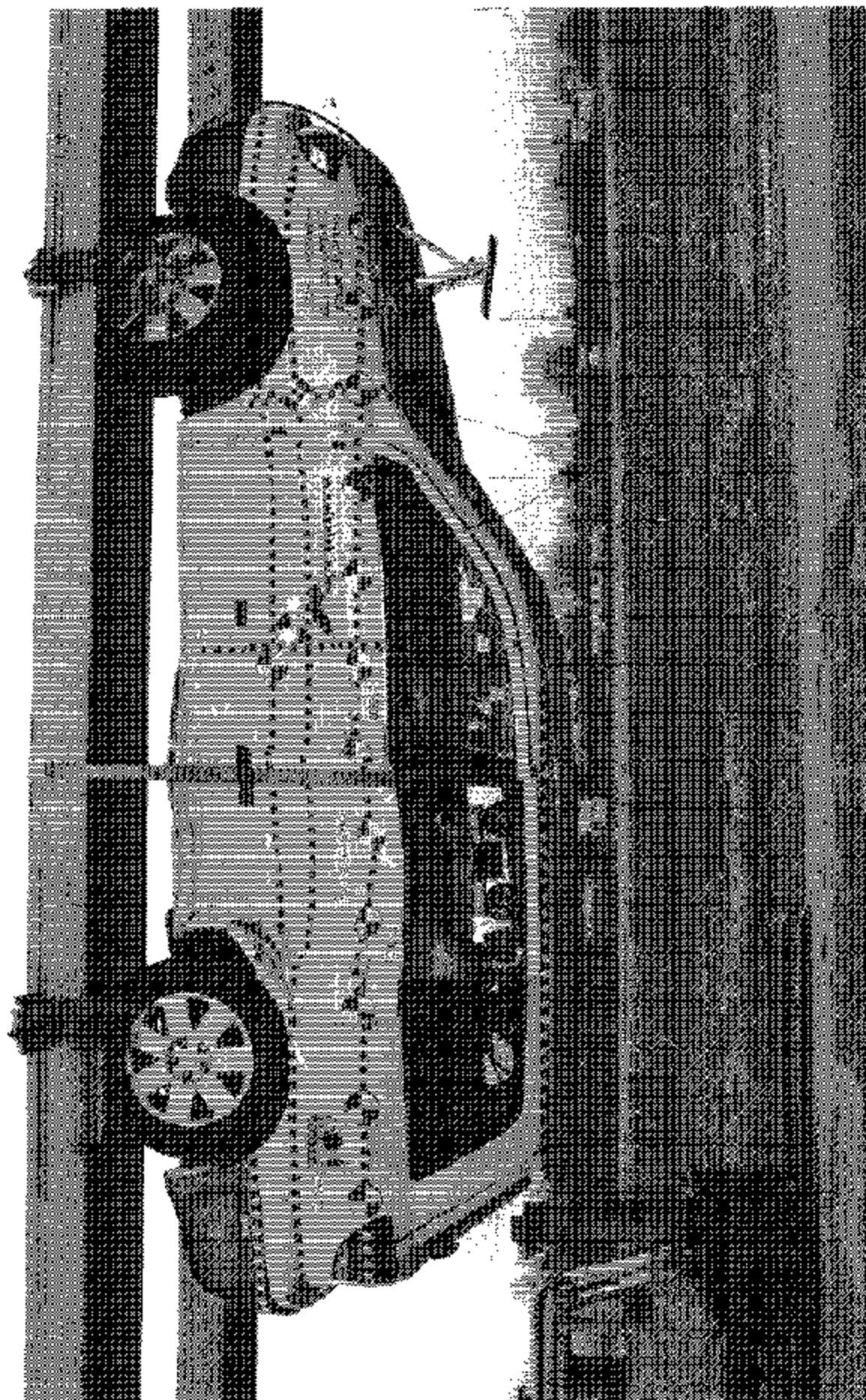


Figure A-44 ROLL OVER 180 DEGREES

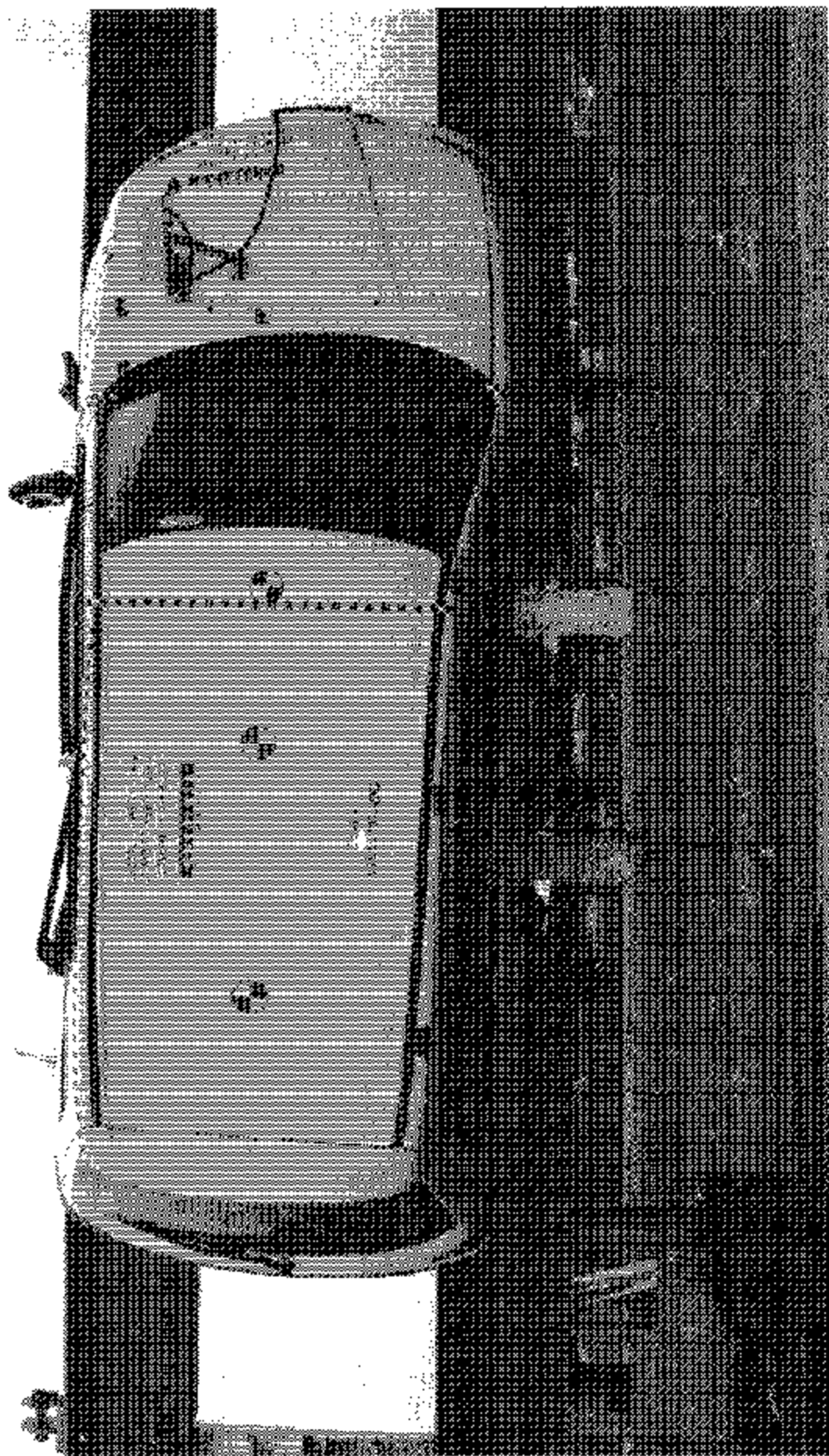


Figure A-45 Rollover 270 DEGREES

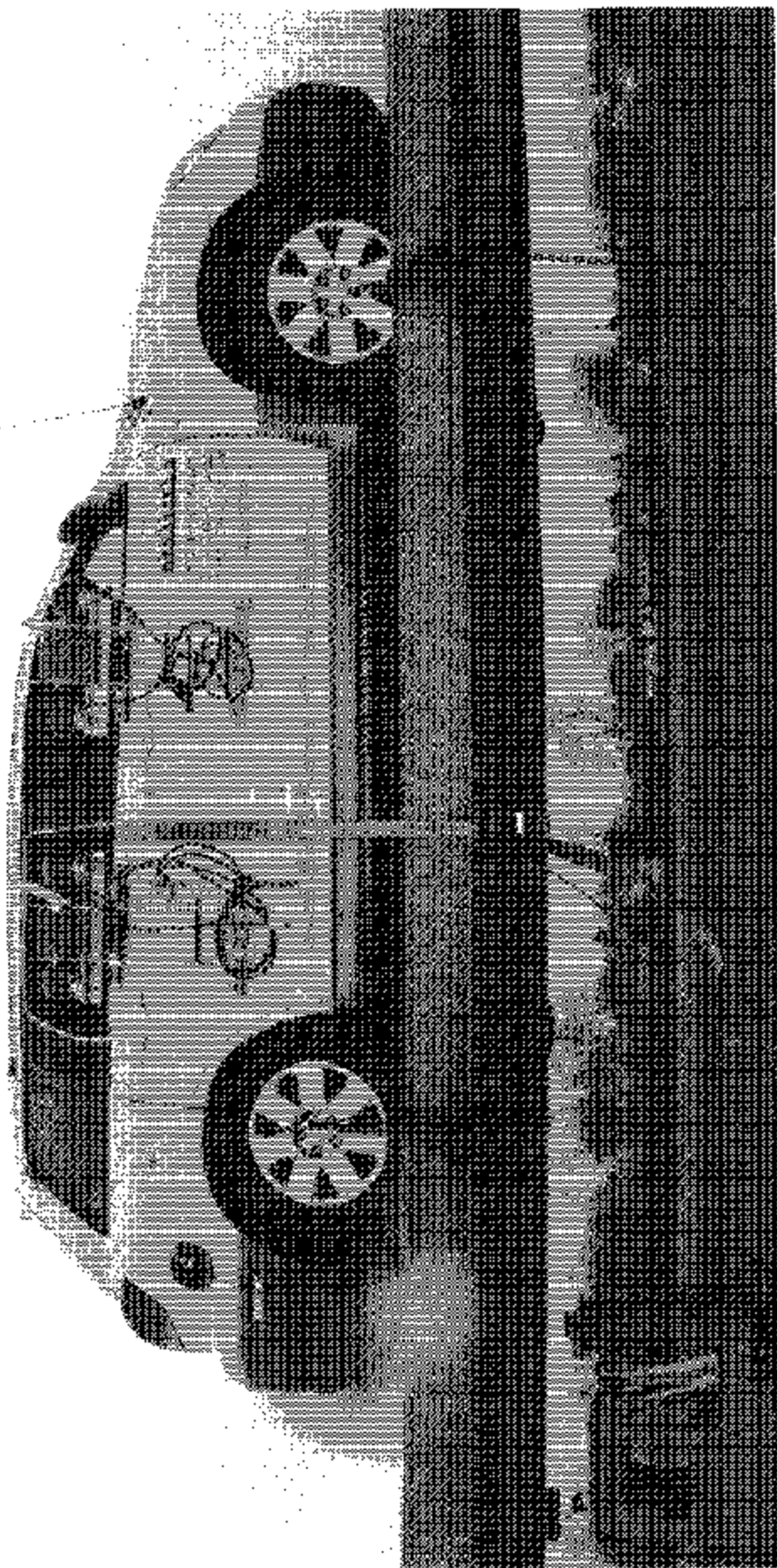


Figure A-46 ROLL OVER 360 DEGREES

APPENDIX B

VEHICLE, MDB AND SID HYBRID III RESPONSE DATA

TABLE OF DATA PLOTS

DRIVER AND PASSENGER DUMMY INSTRUMENTATION PLOTS ACCELERATION, FORCE AND MOMENT DATA - FILTER CLASS 1000, LOWER SPINE - FILTER CLASS 180 INTEGRATION DATA - FILTER CLASS 180

| <u>Plot No.</u> | <u>Data Plot Title</u> | <u>Page</u> |
|-----------------|--|-------------|
| 1 | DRIVER HEAD 9 ARRAY X ARM (Y) ACCELERATION VS TIME | B- 7 |
| 2 | DRIVER HEAD 9 ARRAY X ARM (Y) VELOCITY VS TIME | B- 8 |
| 3 | DRIVER HEAD 9 ARRAY X ARM (Z) ACCELERATION VS TIME | B- 9 |
| 4 | DRIVER HEAD 9 ARRAY X ARM (Z) VELOCITY VS TIME | B- 10 |
| 5 | DRIVER HEAD 9 ARRAY Y ARM (X) ACCELERATION VS TIME | B- 11 |
| 6 | DRIVER HEAD 9 ARRAY Y ARM (X) VELOCITY VS TIME | B- 12 |
| 7 | DRIVER HEAD 9 ARRAY Y ARM (Z) ACCELERATION VS TIME | B- 13 |
| 8 | DRIVER HEAD 9 ARRAY Y ARM (Z) VELOCITY VS TIME | B- 14 |
| 9 | DRIVER HEAD 9 ARRAY Z ARM (X) ACCELERATION VS TIME | B- 15 |
| 10 | DRIVER HEAD 9 ARRAY Z ARM (X) VELOCITY VS TIME | B- 16 |
| 11 | DRIVER HEAD 9 ARRAY Z ARM (Y) ACCELERATION VS TIME | B- 17 |
| 12 | DRIVER HEAD 9 ARRAY Z ARM (Y) VELOCITY VS TIME | B- 18 |
| 13 | DRIVER HEAD (X) ACCELERATION VS TIME | B- 19 |
| 14 | DRIVER HEAD (X) VELOCITY VS TIME | B- 20 |
| 15 | DRIVER HEAD (Y) ACCELERATION VS TIME | B- 21 |
| 16 | DRIVER HEAD (Y) VELOCITY VS TIME | B- 22 |
| 17 | DRIVER HEAD (Z) ACCELERATION VS TIME | B- 23 |
| 18 | DRIVER HEAD (Z) VELOCITY VS TIME | B- 24 |
| 19 | DRIVER HEAD RESULTANT ACCELERATION VS TIME | B- 25 |
| 20 | DRIVER UPPER NECK (X) FORCE VS TIME | B- 26 |
| 21 | DRIVER UPPER NECK (Y) FORCE VS TIME | B- 27 |
| 22 | DRIVER UPPER NECK (Z) FORCE VS TIME | B- 28 |
| 23 | DRIVER UPPER NECK RESULTANT FORCE VS TIME | B- 29 |
| 24 | DRIVER UPPER NECK (X) MOMENT VS TIME | B- 30 |
| 25 | DRIVER UPPER NECK (Y) MOMENT VS TIME | B- 31 |
| 26 | DRIVER UPPER NECK (Z) MOMENT VS TIME | B- 32 |
| 27 | DRIVER UPPER NECK RESULTANT MOMENT VS TIME | B- 33 |
| 28 | DRIVER UPPER RIB (Y) ACCELERATION VS TIME | B- 34 |
| 29 | DRIVER UPPER RIB (Y) VELOCITY VS TIME | B- 35 |
| 30 | DRIVER LOWER RIB (Y) ACCELERATION VS TIME | B- 36 |
| 31 | DRIVER LOWER RIB (Y) VELOCITY VS TIME | B- 37 |
| 32 | DRIVER LOWER SPINE (Y) ACCELERATION VS TIME | B- 38 |
| 33 | DRIVER LOWER SPINE (Y) VELOCITY VS TIME | B- 39 |
| 34 | DRIVER PELVIC (Y) ACCELERATION VS TIME | B- 40 |
| 35 | DRIVER PELVIC (Y) VELOCITY VS TIME | B- 41 |

DRIVER AND PASSENGER DUMMY INSTRUMENTATION PLOTS
ACCELERATION, FORCE AND MOMENT DATA - FILTER CLASS 1000, LOWER SPINE - FILTER CLASS 180
INTEGRATION DATA - FILTER CLASS 180

| <u>Plot No.</u> | <u>Data Plot Title</u> | <u>Page</u> |
|-----------------|---|-------------|
| 36 | PASSENGER HEAD 9 ARRAY X ARM (Y) ACCELERATION VS TIME | B- 42 |
| 37 | PASSENGER HEAD 9 ARRAY X ARM (Y) VELOCITY VS TIME | B- 43 |
| 38 | PASSENGER HEAD 9 ARRAY X ARM (Z) ACCELERATION VS TIME | B- 44 |
| 39 | PASSENGER HEAD 9 ARRAY X ARM (Z) VELOCITY VS TIME | B- 45 |
| 40 | PASSENGER HEAD 9 ARRAY Y ARM (X) ACCELERATION VS TIME | B- 46 |
| 41 | PASSENGER HEAD 9 ARRAY Y ARM (X) VELOCITY VS TIME | B- 47 |
| 42 | PASSENGER HEAD 9 ARRAY Y ARM (Z) ACCELERATION VS TIME | B- 48 |
| 43 | PASSENGER HEAD 9 ARRAY Y ARM (Z) VELOCITY VS TIME | B- 49 |
| 44 | PASSENGER HEAD 9 ARRAY Z ARM (X) ACCELERATION VS TIME | B- 50 |
| 45 | PASSENGER HEAD 9 ARRAY Z ARM (X) VELOCITY VS TIME | B- 51 |
| 46 | PASSENGER HEAD 9 ARRAY Z ARM (Y) ACCELERATION VS TIME | B- 52 |
| 47 | PASSENGER HEAD 9 ARRAY Z ARM (Y) VELOCITY VS TIME | B- 53 |
| 48 | PASSENGER HEAD (X) ACCELERATION VS TIME | B- 54 |
| 49 | PASSENGER HEAD (X) VELOCITY VS TIME | B- 55 |
| 50 | PASSENGER HEAD (Y) ACCELERATION VS TIME | B- 56 |
| 51 | PASSENGER HEAD (Y) VELOCITY VS TIME | B- 57 |
| 52 | PASSENGER HEAD (Z) ACCELERATION VS TIME | B- 58 |
| 53 | PASSENGER HEAD (Z) VELOCITY VS TIME | B- 59 |
| 54 | PASSENGER HEAD RESULTANT ACCELERATION VS TIME | B- 60 |
| 55 | DRIVER UPPER NECK (X) FORCE VS TIME | B- 61 |
| 56 | DRIVER UPPER NECK (Y) FORCE VS TIME | B- 62 |
| 57 | DRIVER UPPER NECK (Z) FORCE VS TIME | B- 63 |
| 58 | DRIVER UPPER NECK RESULTANT FORCE VS TIME | B- 64 |
| 59 | DRIVER UPPER NECK (X) MOMENT VS TIME | B- 65 |
| 60 | DRIVER UPPER NECK (Y) MOMENT VS TIME | B- 66 |
| 61 | DRIVER UPPER NECK (Z) MOMENT VS TIME | B- 67 |
| 62 | DRIVER UPPER NECK RESULTANT MOMENT VS TIME | B- 68 |
| 63 | PASSENGER UPPER RIB (Y) ACCELERATION VS TIME | B- 69 |
| 64 | PASSENGER UPPER RIB (Y) VELOCITY VS TIME | B- 70 |
| 65 | PASSENGER LOWER RIB (Y) ACCELERATION VS TIME | B- 71 |
| 66 | PASSENGER LOWER RIB (Y) VELOCITY VS TIME | B- 72 |
| 67 | PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME | B- 73 |
| 68 | PASSENGER LOWER SPINE (Y) VELOCITY VS TIME | B- 74 |
| 69 | PASSENGER PELVIC (Y) ACCELERATION VS TIME | B- 75 |
| 70 | PASSENGER PELVIC (Y) VELOCITY VS TIME | B- 76 |

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS
ACCELERATION DATA - FIR FILTERED

| <u>Plot No.</u> | <u>Data Plot Title</u> | <u>Page</u> |
|-----------------|--|-------------|
| 71 | DRIVER UPPER RIB (Y) ACCELERATION VS TIME | B- 77 |
| 72 | DRIVER LOWER RIB (Y) ACCELERATION VS TIME | B- 78 |
| 73 | DRIVER LOWER SPINE (Y) ACCELERATION VS TIME | B- 79 |
| 74 | DRIVER PELVIC (Y) ACCELERATION VS TIME | B- 80 |
| 75 | PASSENGER UPPER RIB (Y) ACCELERATION VS TIME | B- 81 |
| 76 | PASSENGER LOWER RIB (Y) ACCELERATION VS TIME | B- 82 |
| 77 | PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME | B- 83 |
| 78 | PASSENGER PELVIC (Y) ACCELERATION VS TIME | B- 84 |

TEST VEHICLE INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180

| <u>Plot No.</u> | <u>Data Plot Title</u> | <u>Page</u> |
|-----------------|--|-------------|
| 79 | RIGHT SIDE SILL AT FRONT SEAT (X) ACCELERATION VS TIME | B- 85 |
| 80 | RIGHT SIDE SILL AT FRONT SEAT (X) VELOCITY VS TIME | B- 86 |
| 81 | RIGHT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME | B- 87 |
| 82 | RIGHT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME | B- 88 |
| 83 | RIGHT SIDE SILL AT FRONT SEAT (Z) ACCELERATION VS TIME | B- 89 |
| 84 | RIGHT SIDE SILL AT FRONT SEAT (Z) VELOCITY VS TIME | B- 90 |
| 85 | RIGHT SIDE SILL AT FRONT SEAT RESULTANT ACCELERATION VS TIME | B- 91 |
| 86 | RIGHT SIDE SILL AT REAR SEAT (X) ACCELERATION VS TIME | B- 92 |
| 87 | RIGHT SIDE SILL AT REAR SEAT (X) VELOCITY VS TIME | B- 93 |
| 88 | RIGHT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME | B- 94 |
| 89 | RIGHT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME | B- 95 |
| 90 | RIGHT SIDE SILL AT REAR SEAT (Z) ACCELERATION VS TIME | B- 96 |
| 91 | RIGHT SIDE SILL AT REAR SEAT (Z) VELOCITY VS TIME | B- 97 |
| 92 | RIGHT SIDE SILL AT REAR SEAT RESULTANT ACCELERATION VS TIME | B- 98 |
| 93 | REAR FLOORPAN ABOVE AXLE (X) ACCELERATION VS TIME | B- 99 |
| 94 | REAR FLOORPAN ABOVE AXLE (X) VELOCITY VS TIME | B- 100 |
| 95 | REAR FLOORPAN ABOVE AXLE (Y) ACCELERATION VS TIME | B- 101 |
| 96 | REAR FLOORPAN ABOVE AXLE (Y) VELOCITY VS TIME | B- 102 |
| 97 | REAR FLOORPAN ABOVE AXLE (Z) ACCELERATION VS TIME | B- 103 |
| 98 | REAR FLOORPAN ABOVE AXLE (Z) VELOCITY VS TIME | B- 104 |
| 99 | REAR FLOORPAN ABOVE AXLE RESULTANT ACCELERATION VS TIME | B- 105 |
| 100 | LEFT SIDE SILL AT REAR SEAT (Y) ACCELERATION VS TIME | B- 106 |
| 101 | LEFT SIDE SILL AT REAR SEAT (Y) VELOCITY VS TIME | B- 107 |
| 102 | LEFT SIDE SILL AT FRONT SEAT (Y) ACCELERATION VS TIME | B- 108 |
| 103 | LEFT SIDE SILL AT FRONT SEAT (Y) VELOCITY VS TIME | B- 109 |
| 104 | RIGHT REAR OCCUPANT COMPARTMENT (Y) ACCELERATION VS TIME | B- 110 |
| 105 | RIGHT REAR OCCUPANT COMPARTMENT (Y) VELOCITY VS TIME | B- 111 |
| 106 | LOWER B-POST (Y) ACCELERATION VS TIME | B- 112 |
| 107 | LOWER B-POST (Y) VELOCITY VS TIME | B- 113 |
| 108 | UPPER B-POST (Y) ACCELERATION VS TIME | B- 114 |
| 109 | UPPER B-POST (Y) VELOCITY VS TIME | B- 115 |
| 110 | LOWER A-POST (Y) ACCELERATION VS TIME | B- 116 |
| 111 | LOWER A-POST (Y) VELOCITY VS TIME | B- 117 |
| 112 | UPPER A-POST (Y) ACCELERATION VS TIME | B- 118 |
| 113 | UPPER A-POST (Y) VELOCITY VS TIME | B- 119 |
| 114 | FRONT SEAT TRACK (Y) ACCELERATION VS TIME | B- 120 |
| 115 | FRONT SEAT TRACK (Y) VELOCITY VS TIME | B- 121 |
| 116 | REAR SEAT TRACK (Y) ACCELERATION VS TIME | B- 122 |
| 117 | REAR SEAT TRACK (Y) VELOCITY VS TIME | B- 123 |

TEST VEHICLE INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180

| <u>Plot No.</u> | <u>Data Plot Title</u> | <u>Page</u> |
|-----------------|---|-------------|
| 118 | VEHICLE CENTER OF GRAVITY (X) ACCELERATION VS TIME | B- 124 |
| 119 | VEHICLE CENTER OF GRAVITY (X) VELOCITY VS TIME | B- 125 |
| 120 | VEHICLE CENTER OF GRAVITY (Y) ACCELERATION VS TIME | B- 126 |
| 121 | VEHICLE CENTER OF GRAVITY (Y) VELOCITY ACCELERATION VS TIME | B- 127 |
| 122 | VEHICLE CENTER OF GRAVITY (Z) ACCELERATION VS TIME | B- 128 |
| 123 | VEHICLE CENTER OF GRAVITY (Z) VELOCITY VS TIME | B- 129 |
| 124 | VEHICLE CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME | B- 130 |

MDB INSTRUMENTATION PLOTS
ACCELERATION DATA - FILTER CLASS 60
INTEGRATION DATA - FILTER CLASS 180

| <u>Plot No.</u> | <u>Data Plot Title</u> | <u>Page</u> |
|-----------------|--|-------------|
| 125 | MDB CENTER OF GRAVITY (X) ACCELERATION VS TIME | B- 131 |
| 126 | MDB CENTER OF GRAVITY (X) VELOCITY VS TIME | B- 132 |
| 127 | MDB CENTER OF GRAVITY (Y) ACCELERATION VS TIME | B- 133 |
| 128 | MDB CENTER OF GRAVITY (Y) VELOCITY VS TIME | B- 134 |
| 129 | MDB CENTER OF GRAVITY (Z) ACCELERATION VS TIME | B- 135 |
| 130 | MDB CENTER OF GRAVITY (Z) VELOCITY VS TIME | B- 136 |
| 131 | MDB CENTER OF GRAVITY RESULTANT ACCELERATION VS TIME | B- 137 |
| 132 | MDB REAR (X) ACCELERATION VS TIME | B- 138 |
| 133 | MDB REAR (X) VELOCITY VS TIME | B- 139 |
| 134 | MDB REAR (Y) ACCELERATION VS TIME | B- 140 |
| 135 | MDB REAR (Y) VELOCITY VS TIME | B- 141 |

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
ACCELERATION DATA - FILTER CLASS 1000, LOWER SPINE - FILTER CLASS 180
INTEGRATION DATA - FILTER CLASS 180

| <u>Plot No.</u> | <u>Data Plot Title</u> | <u>Page</u> |
|-----------------|--|-------------|
| 136 | DRIVER UPPER RIB (Y) ACCELERATION VS TIME | B- 142 |
| 137 | DRIVER UPPER RIB (Y) VELOCITY VS TIME | B- 143 |
| 138 | DRIVER LOWER RIB (Y) ACCELERATION VS TIME | B- 144 |
| 139 | DRIVER LOWER RIB (Y) VELOCITY VS TIME | B- 145 |
| 140 | DRIVER LOWER SPINE (Y) ACCELERATION VS TIME | B- 146 |
| 141 | DRIVER LOWER SPINE (Y) VELOCITY VS TIME | B- 147 |
| 142 | DRIVER PELVIC (Y) ACCELERATION VS TIME | B- 148 |
| 143 | DRIVER PELVIC (Y) VELOCITY VS TIME | B- 149 |
| 144 | PASSENGER UPPER RIB (Y) ACCELERATION VS TIME | B- 150 |
| 145 | PASSENGER UPPER RIB (Y) VELOCITY VS TIME | B- 151 |
| 146 | PASSENGER LOWER RIB (Y) ACCELERATION VS TIME | B- 152 |
| 147 | PASSENGER LOWER RIB (Y) VELOCITY VS TIME | B- 153 |
| 148 | PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME | B- 154 |
| 149 | PASSENGER LOWER SPINE (Y) VELOCITY VS TIME | B- 155 |
| 150 | PASSENGER PELVIC (Y) ACCELERATION VS TIME | B- 156 |
| 151 | PASSENGER PELVIC (Y) VELOCITY VS TIME | B- 157 |

DRIVER & PASSENGER DUMMY INSTRUMENTATION PLOTS (REDUNDANT)
ACCELERATION DATA - FIR FILTERED

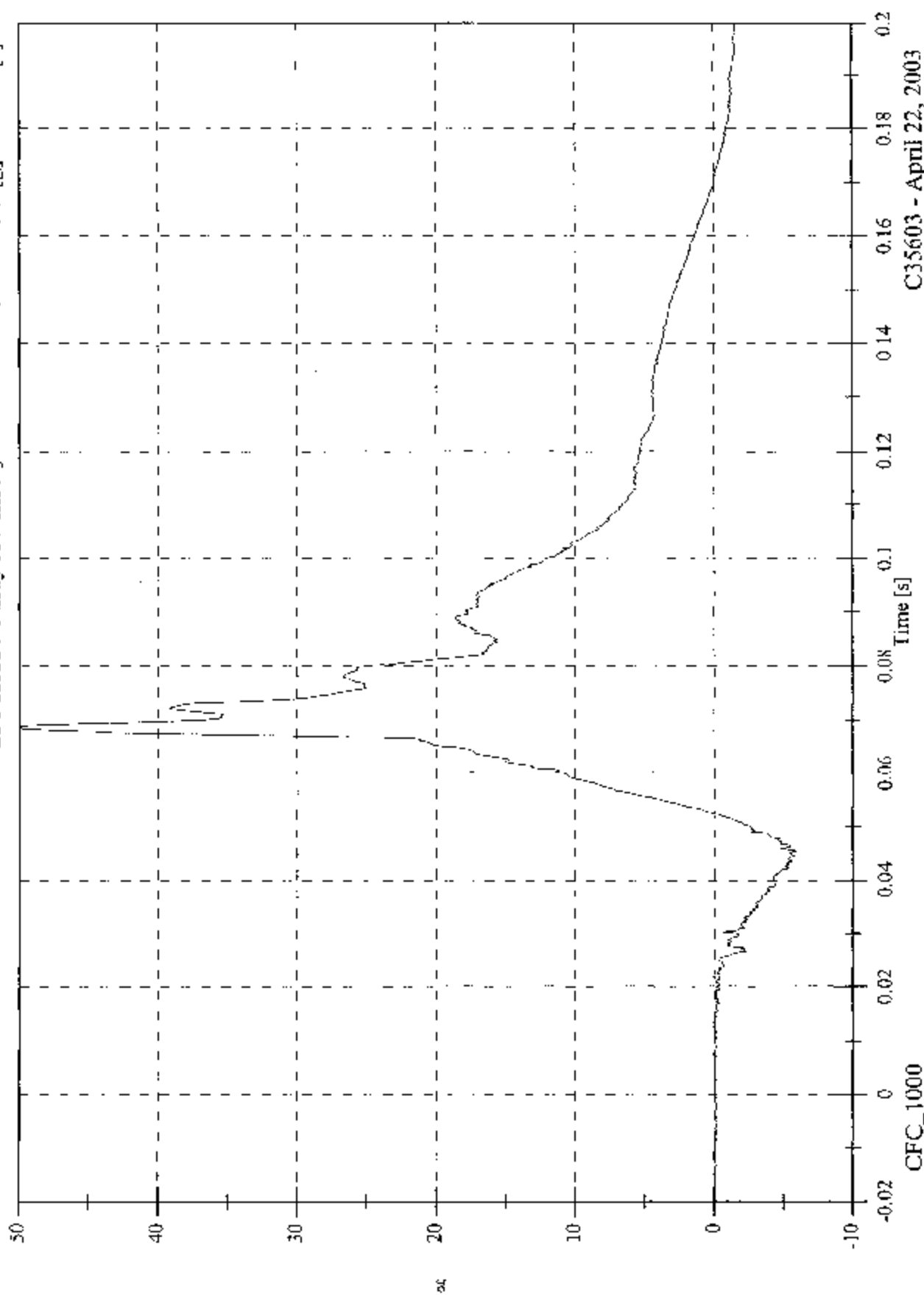
| <u>Plot No.</u> | <u>Data Plot Title</u> | <u>Page</u> |
|-----------------|--|-------------|
| 152 | DRIVER UPPER RIB (Y) ACCELERATION VS TIME | B- 158 |
| 153 | DRIVER LOWER RIB (Y) ACCELERATION VS TIME | B- 159 |
| 154 | DRIVER LOWER SPINE (Y) ACCELERATION VS TIME | B- 160 |
| 155 | DRIVER PELVIC (Y) ACCELERATION VS TIME | B- 161 |
| 156 | PASSENGER UPPER RIB (Y) ACCELERATION VS TIME | B- 162 |
| 157 | PASSENGER LOWER RIB (Y) ACCELERATION VS TIME | B- 163 |
| 158 | PASSENGER LOWER SPINE (Y) ACCELERATION VS TIME | B- 164 |
| 159 | PASSENGER PELVIC (Y) ACCELERATION VS TIME | B- 165 |

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Head 9 Array X Arm Ay

Max: 50.0 [g] at 0.068 [s]

Min: -5.9 [g] at 0.045 [s]



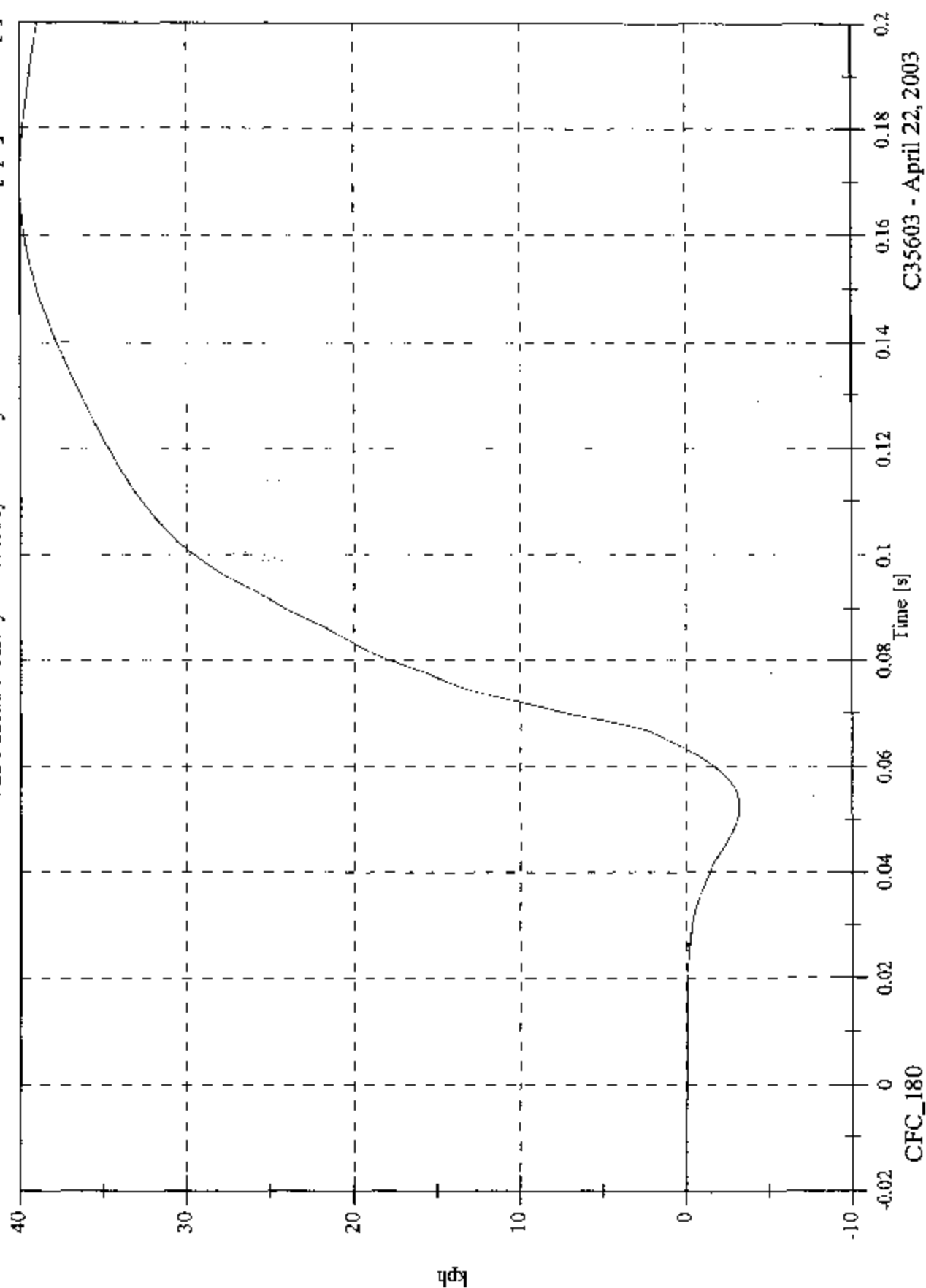
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2PI Head 9 Array X Arm Ay Velocity

Max: 40.0 [kph] at 0.170 [s]

Min: -3.2 [kph] at 0.053 [s]



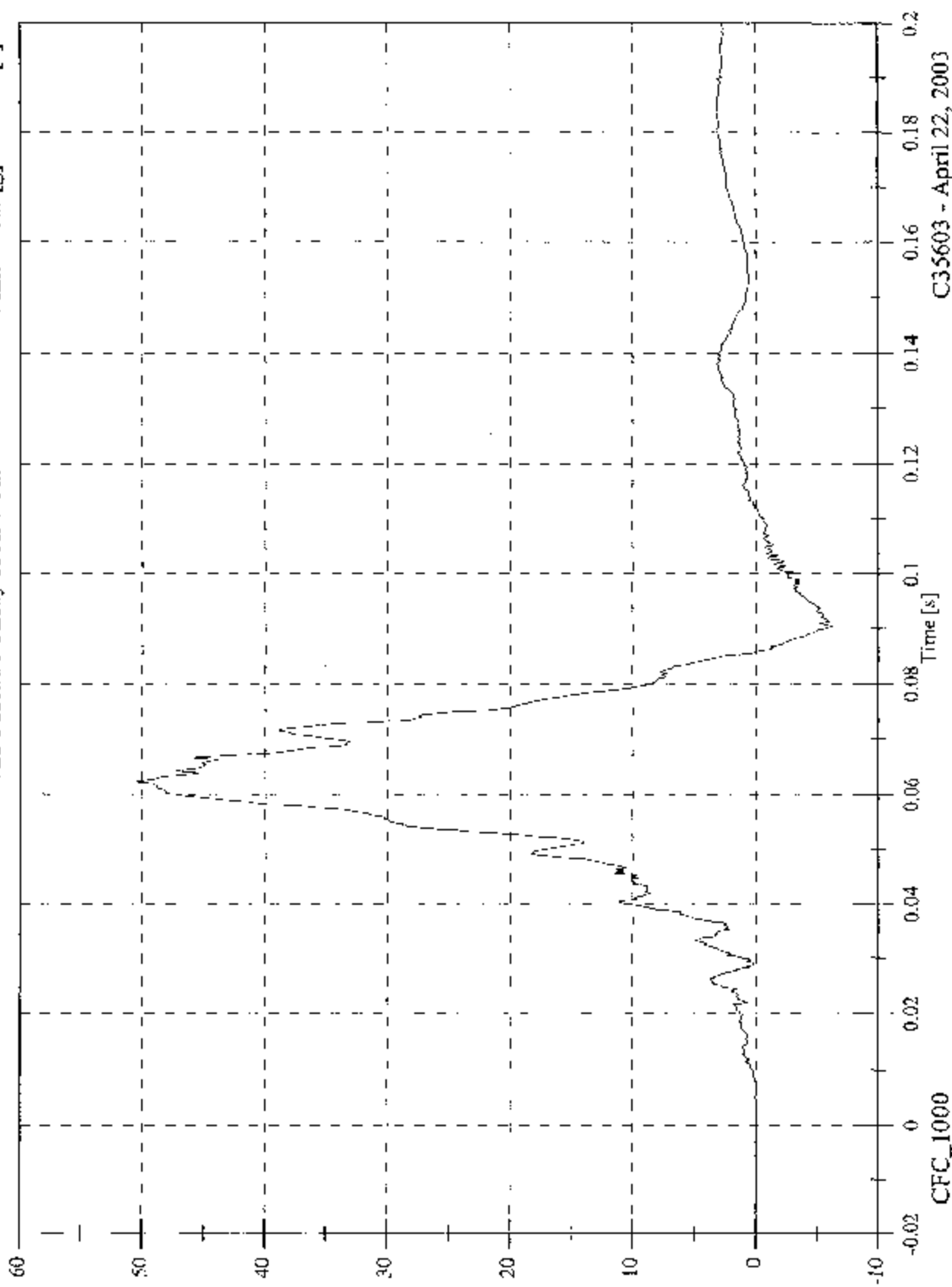
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2PI Head 9 Array X Arm Az

Max: 50.5 [g] at 0.062 [s]

Min: -6.2 [g] at 0.090 [s]

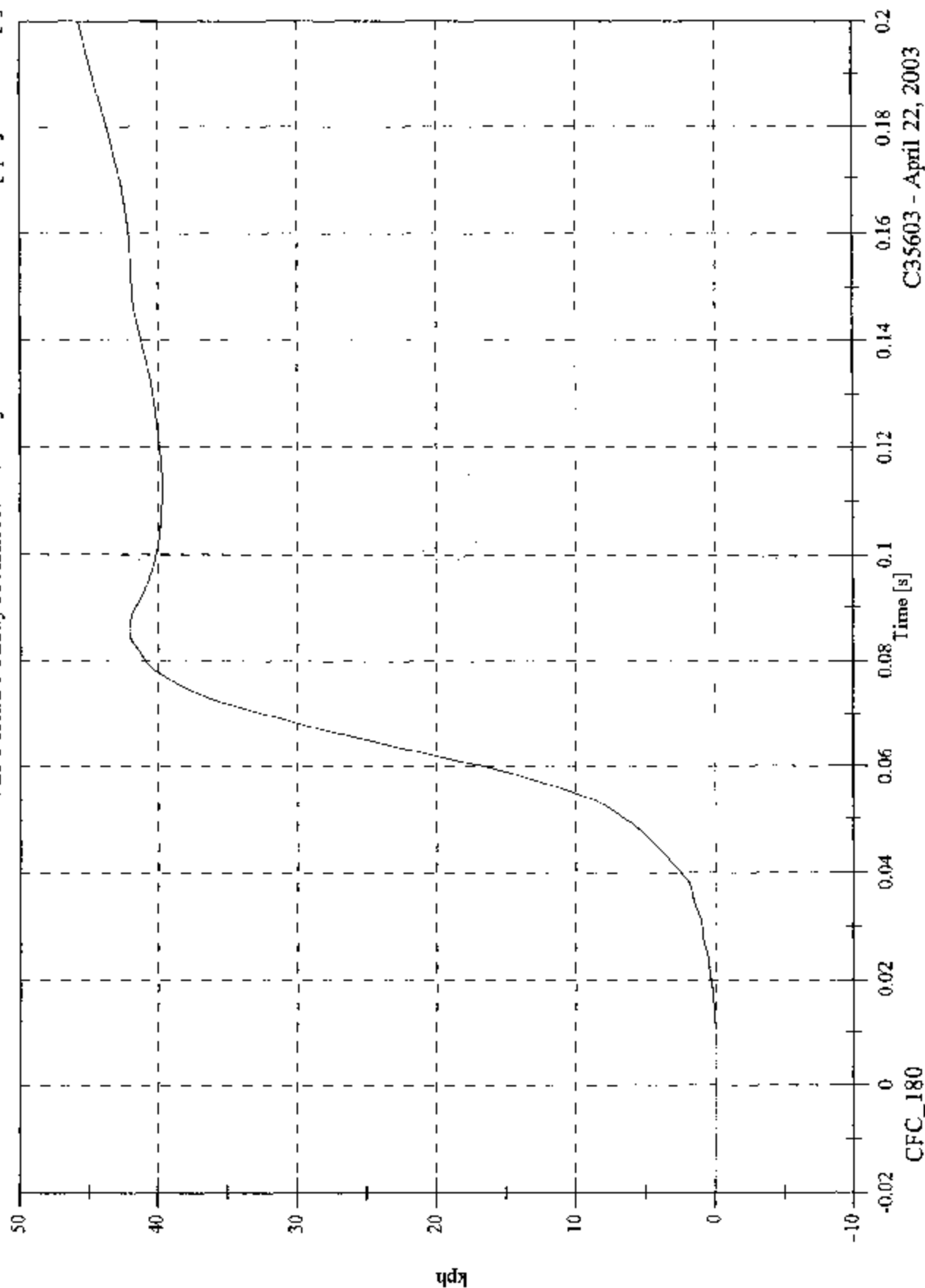


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Head 9 Array X Arm Az Velocity

Max: 45.8 [kph] at 0.200 [s]
Min: -0.0 [kph] at -0.003 [s]

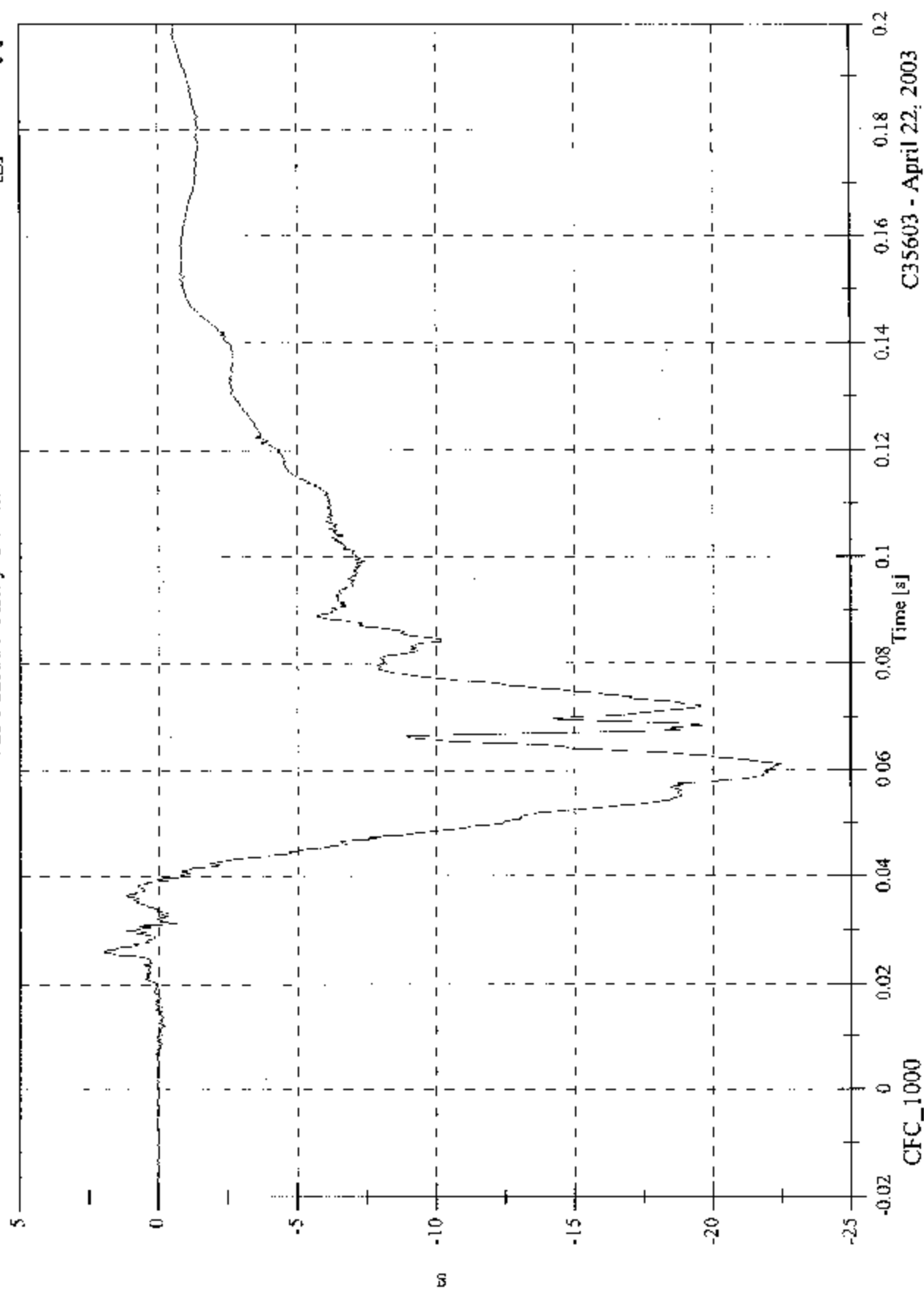


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Head 9 Array Y Arm Ax

Max: 2.0 [g] at 0.026 [s]
Min: -22.5 [g] at 0.061 [s]



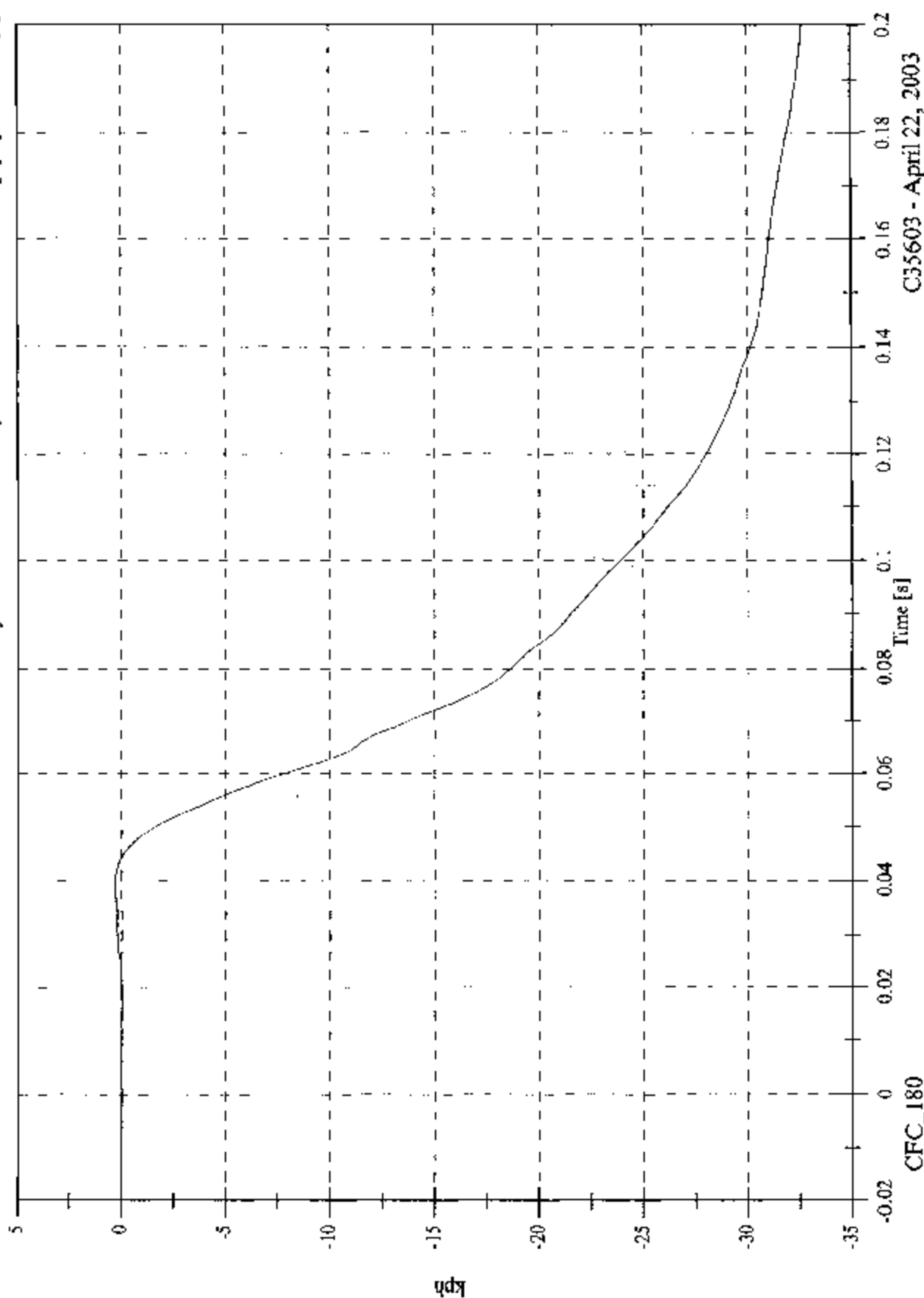
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Head 9 Array Y Arm Ax Velocity

Max: 0.3 [kph] at 0.039 [s]

Min: -32.6 [kph] at 0.200 [s]

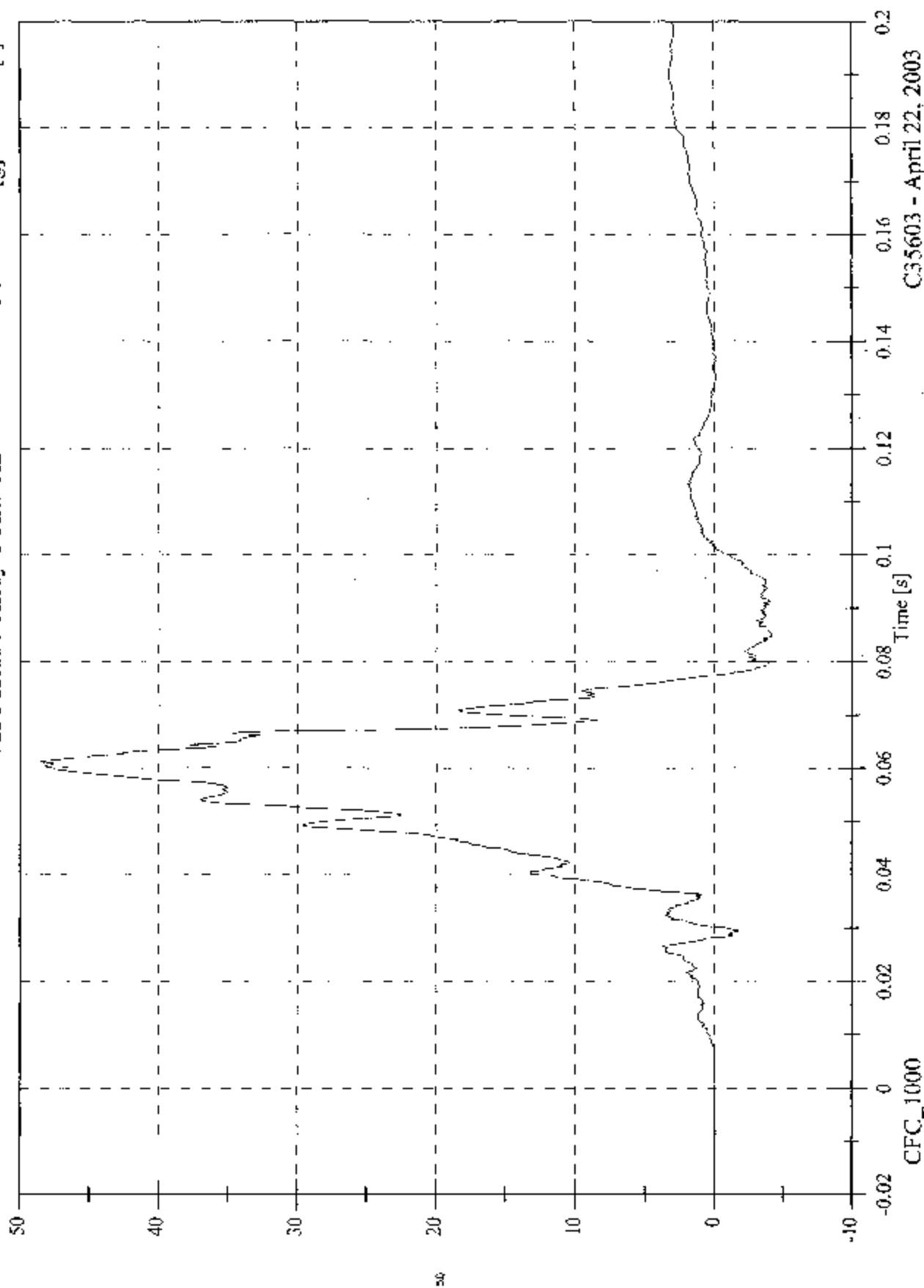


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Head 9 Array Y Arm Az

Max: 48.6 [g] at 0.061 [s]
Min: -4.2 [g] at 0.085 [s]

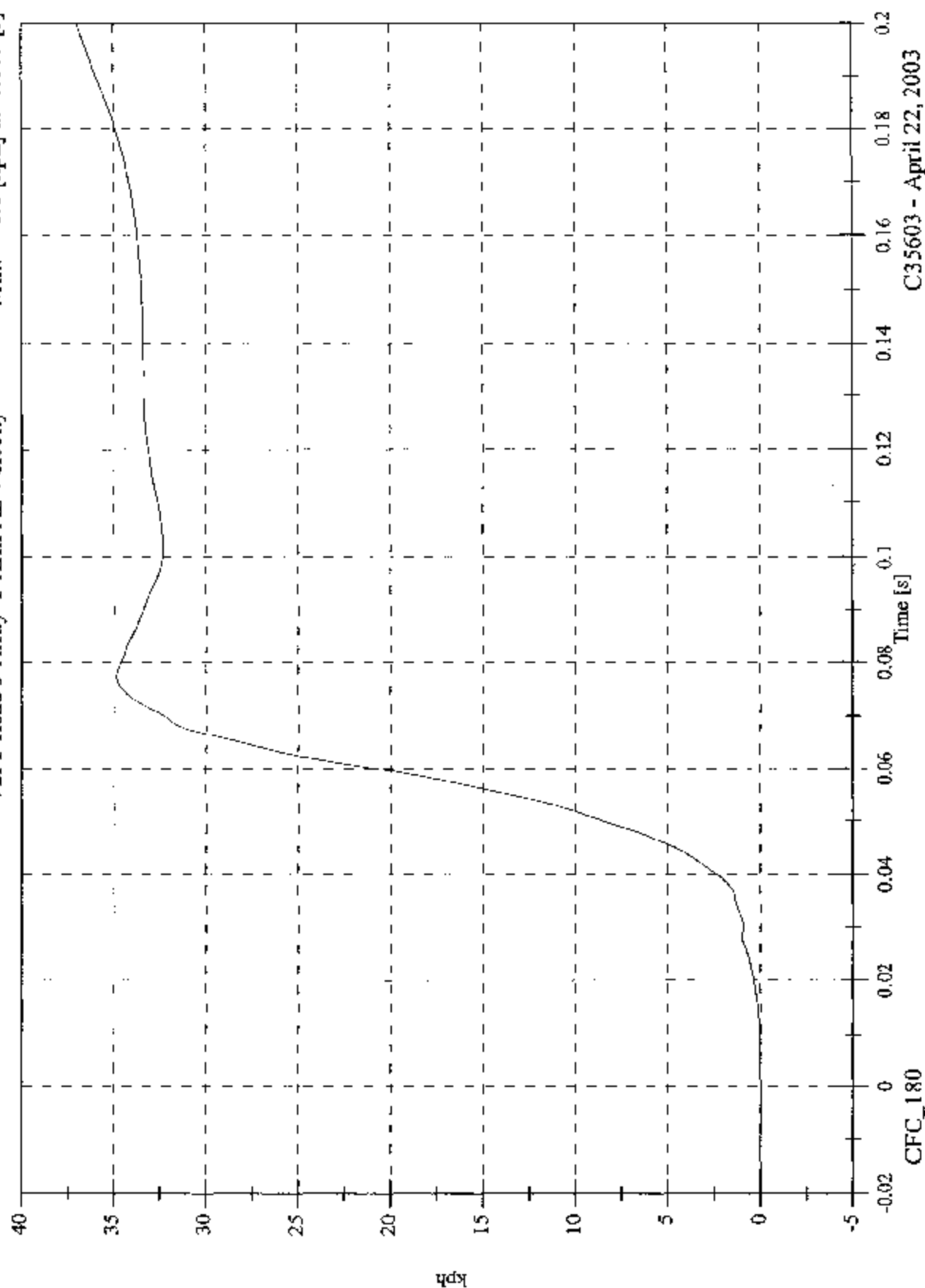


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Head 9 Array Y Arm Az Velocity

Max: 37.0 [kph] at 0.200 [s]
Min: -0.0 [kph] at -0.005 [s]

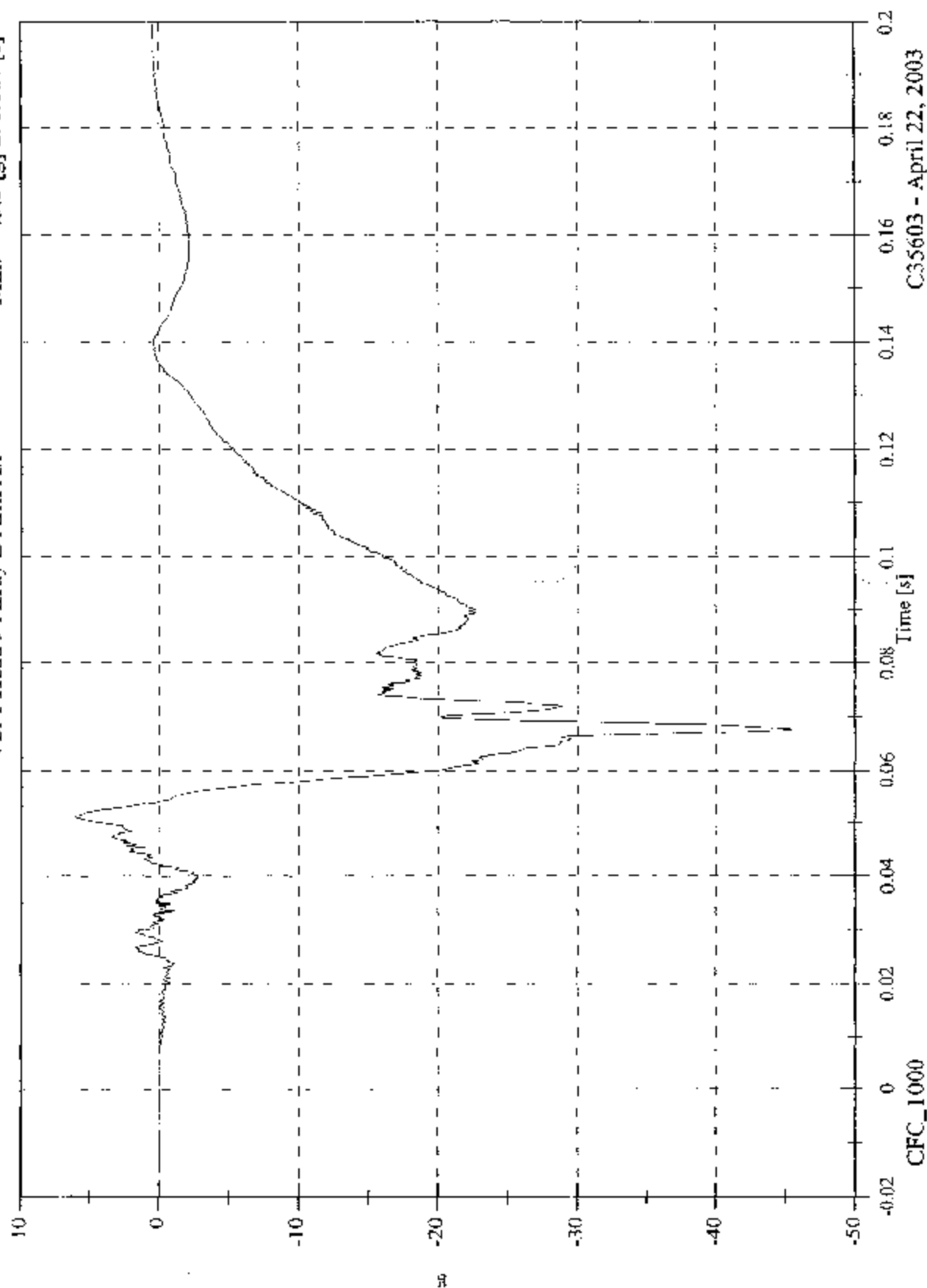


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Head 9 Array Z Arm Ax

Max: 6.1 [g] at 0.051 [s]
Min: -45.5 [g] at 0.067 [s]

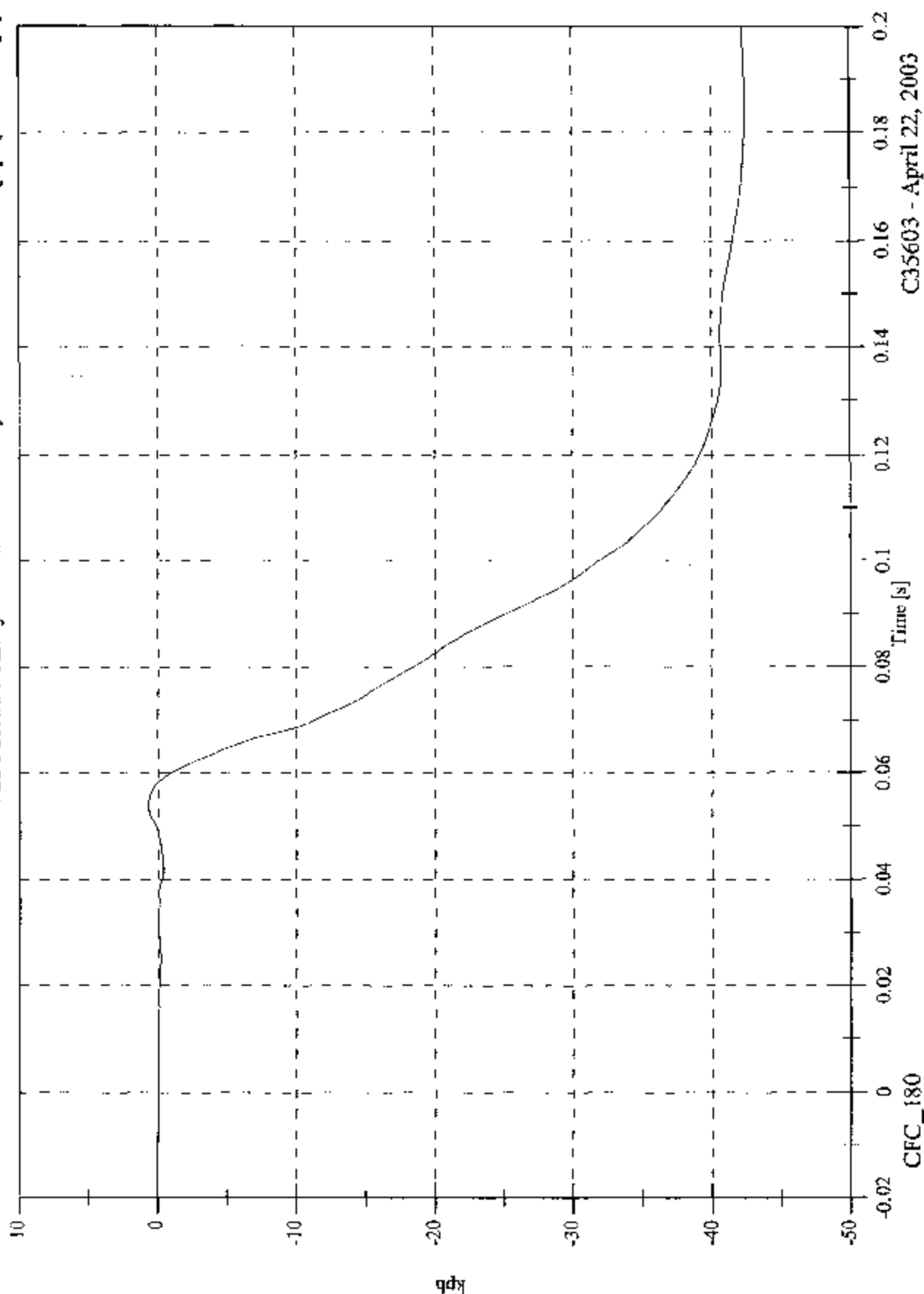


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Head 9 Array Z Arm Ax Velocity

Max: 0.7 [kph] at 0.054 [s]
Min: -42.4 [kph] at 0.184 [s]

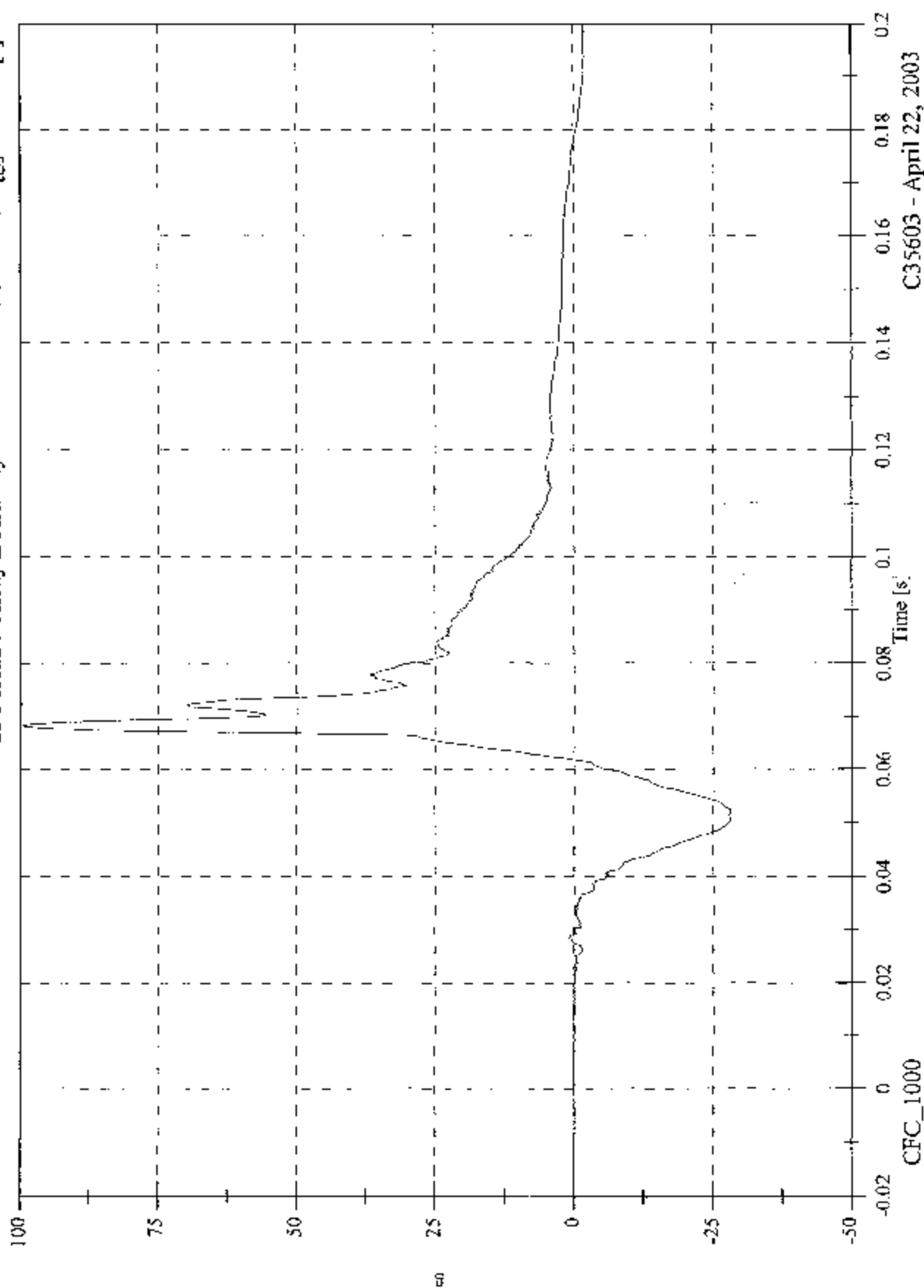


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Head 9 Array Z Arm Ay

Max: 99.6 [g] at 0.068 [s]
Min: -28.1 [g] at 0.052 [s]

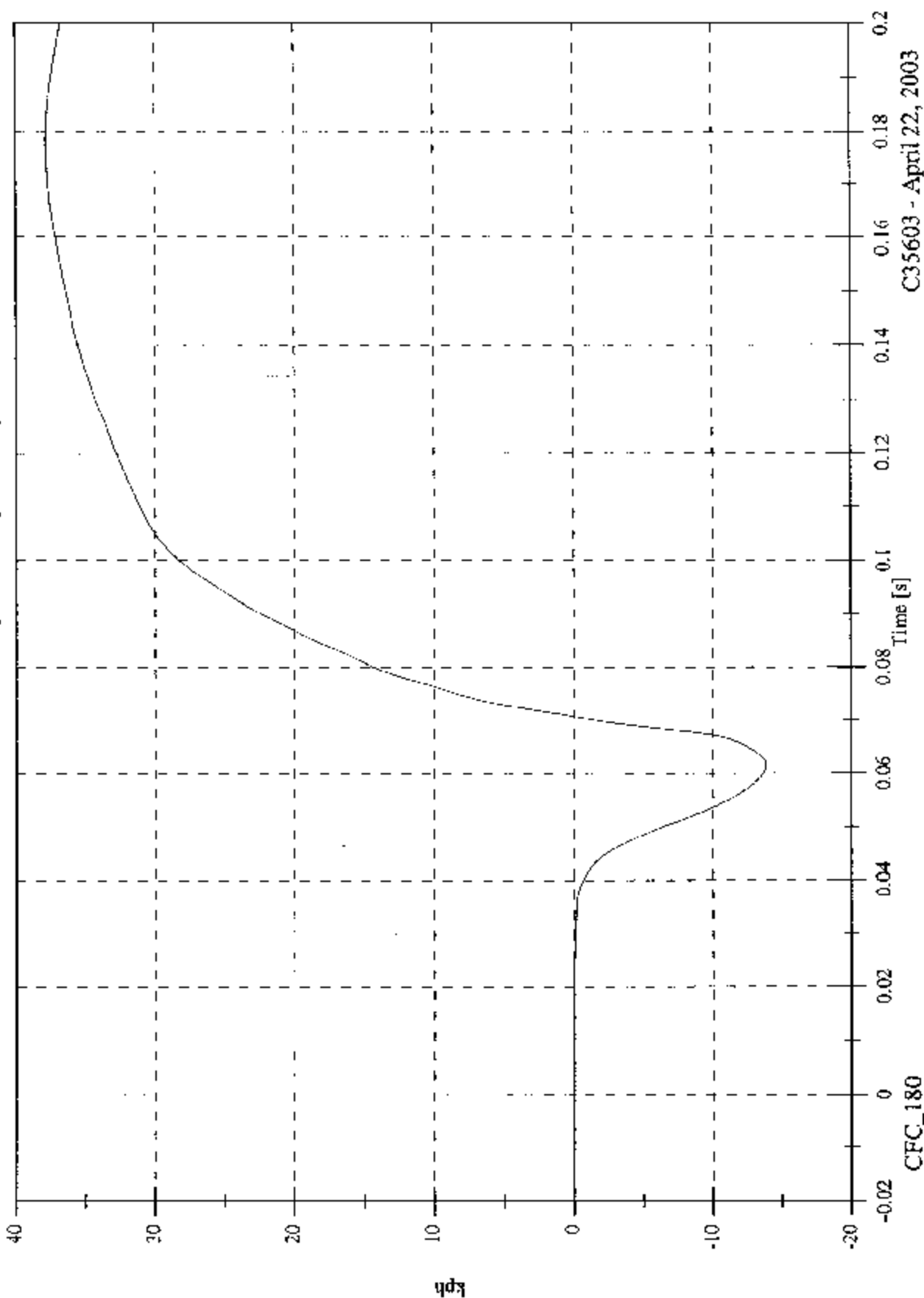


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Head 9 Array Z Arm Ay Velocity

Max: 37.8 [kph] at 0.178 [s]
Min: -13.8 [kph] at 0.062 [s]

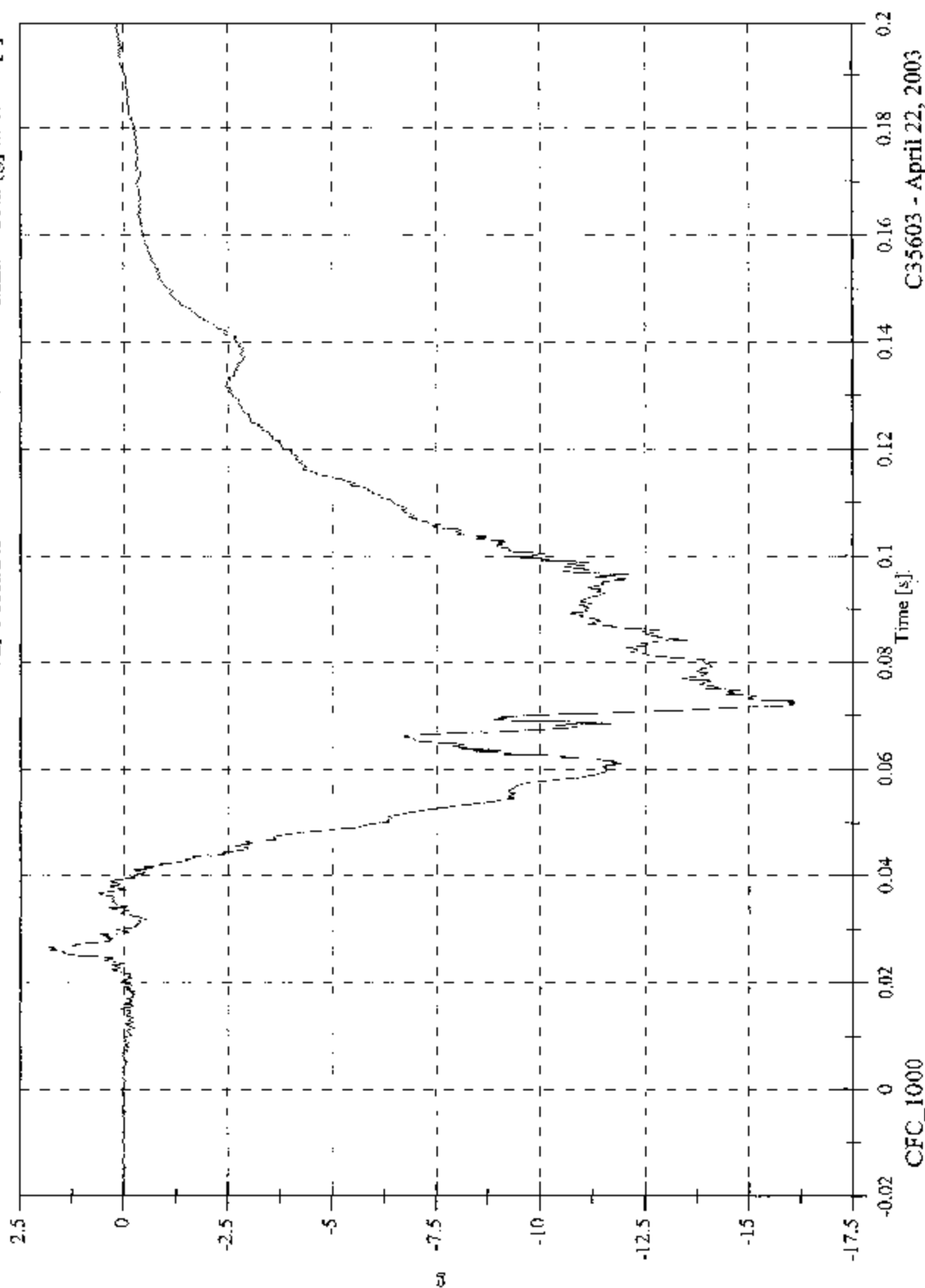


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 1.8 [g] at 0.027 [s]
Min: -16.2 [g] at 0.072 [s]

V2P1 Head x

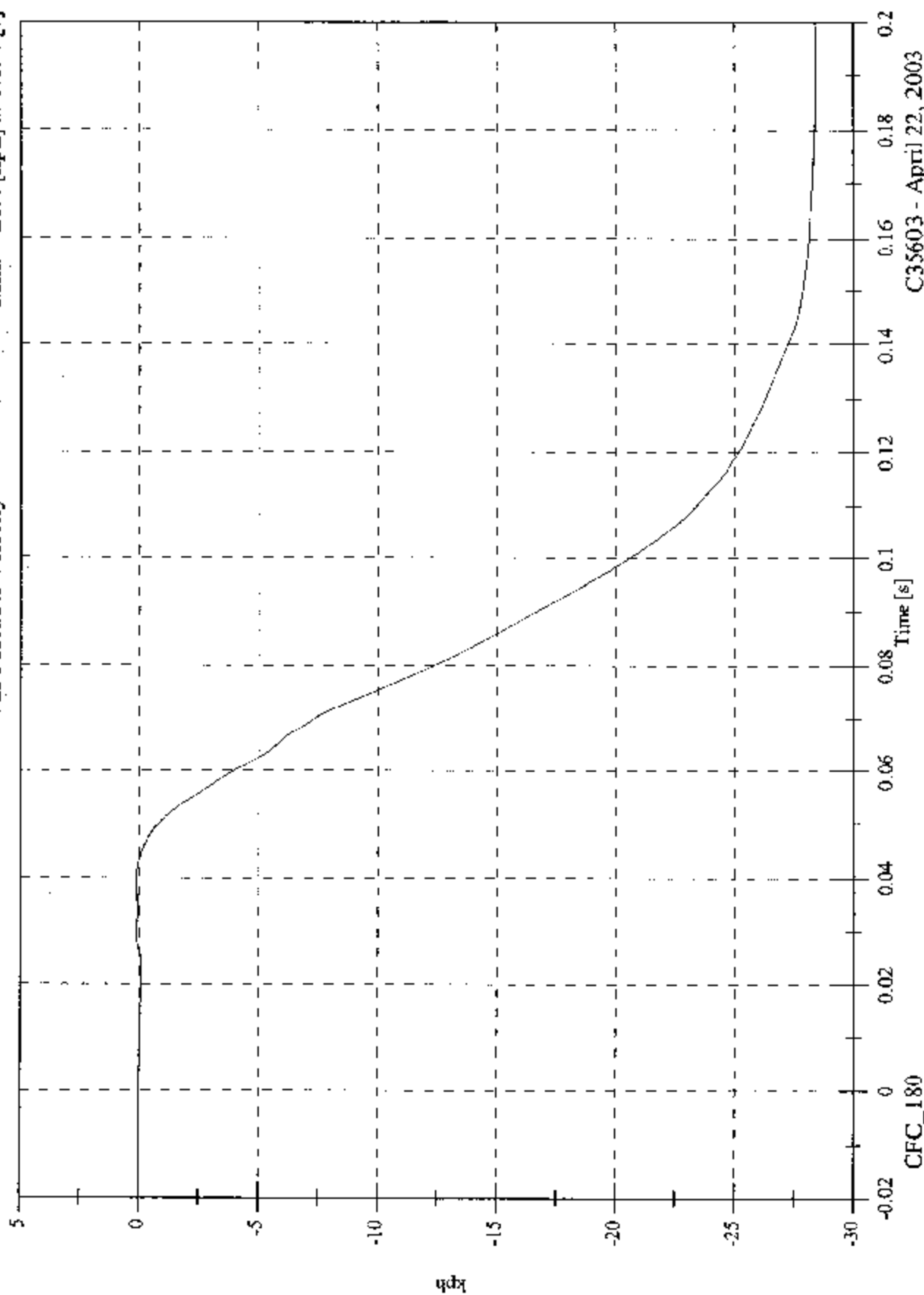


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Head x Velocity

Max: 0.1 [kph] at 0.039 [s]
Min: -28.4 [kph] at 0.191 [s]

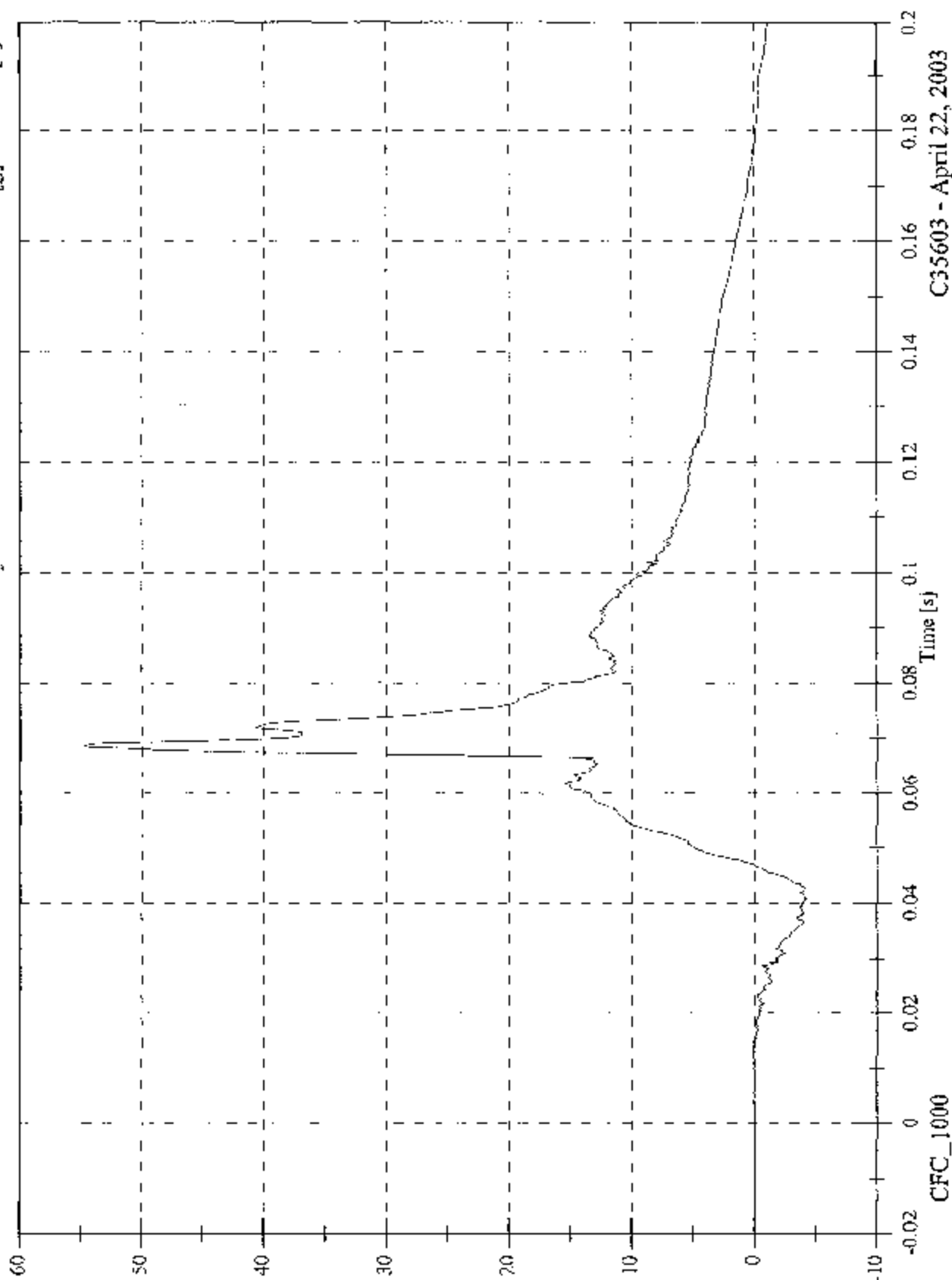


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 54.9 [g] at 0.068 [s]
Min: -4.3 [g] at 0.041 [s]

V2P1 Head y

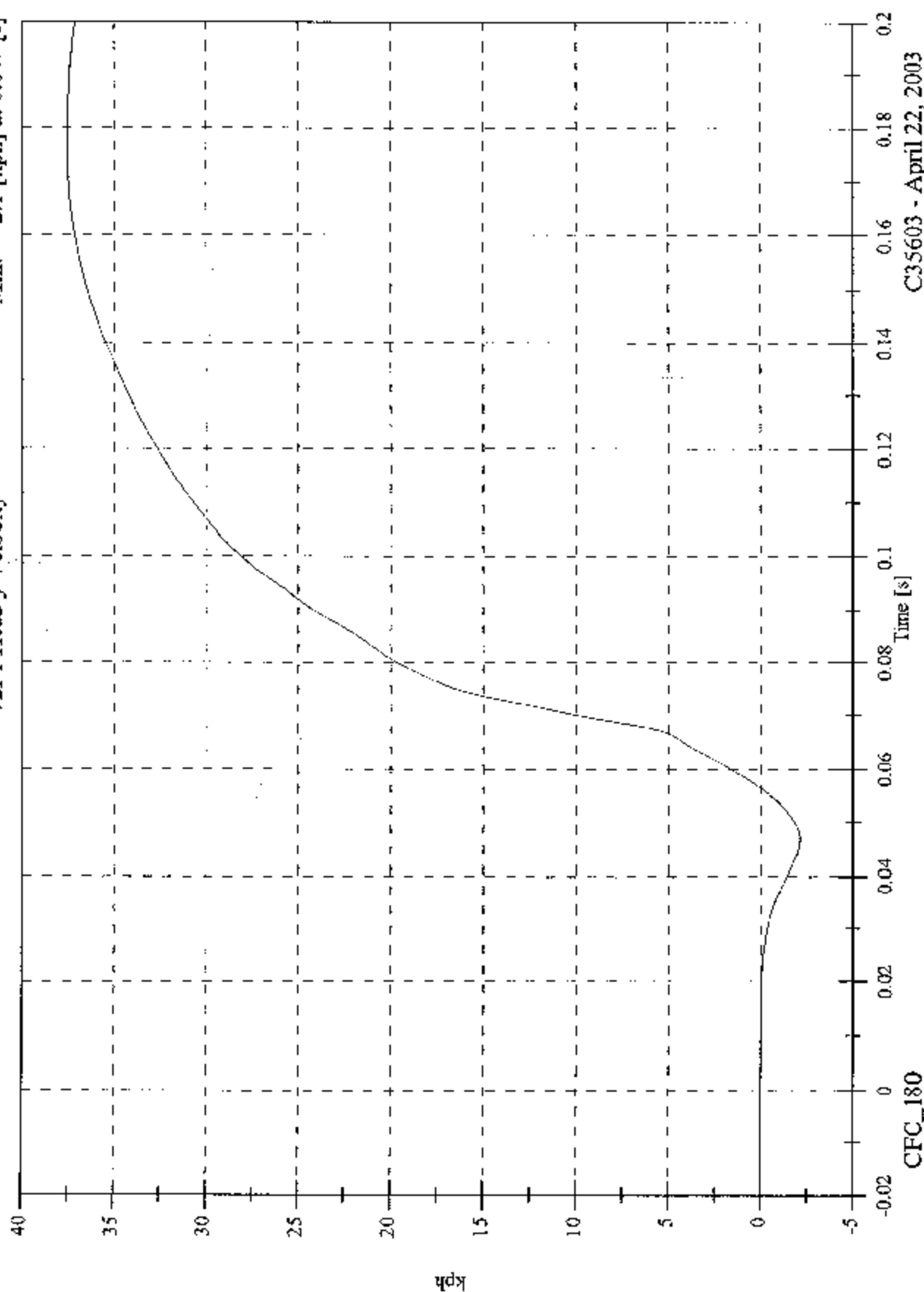


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Head y Velocity

Max: 37.6 [kph] at 0.177 [s]
Min: -2.1 [kph] at 0.047 [s]



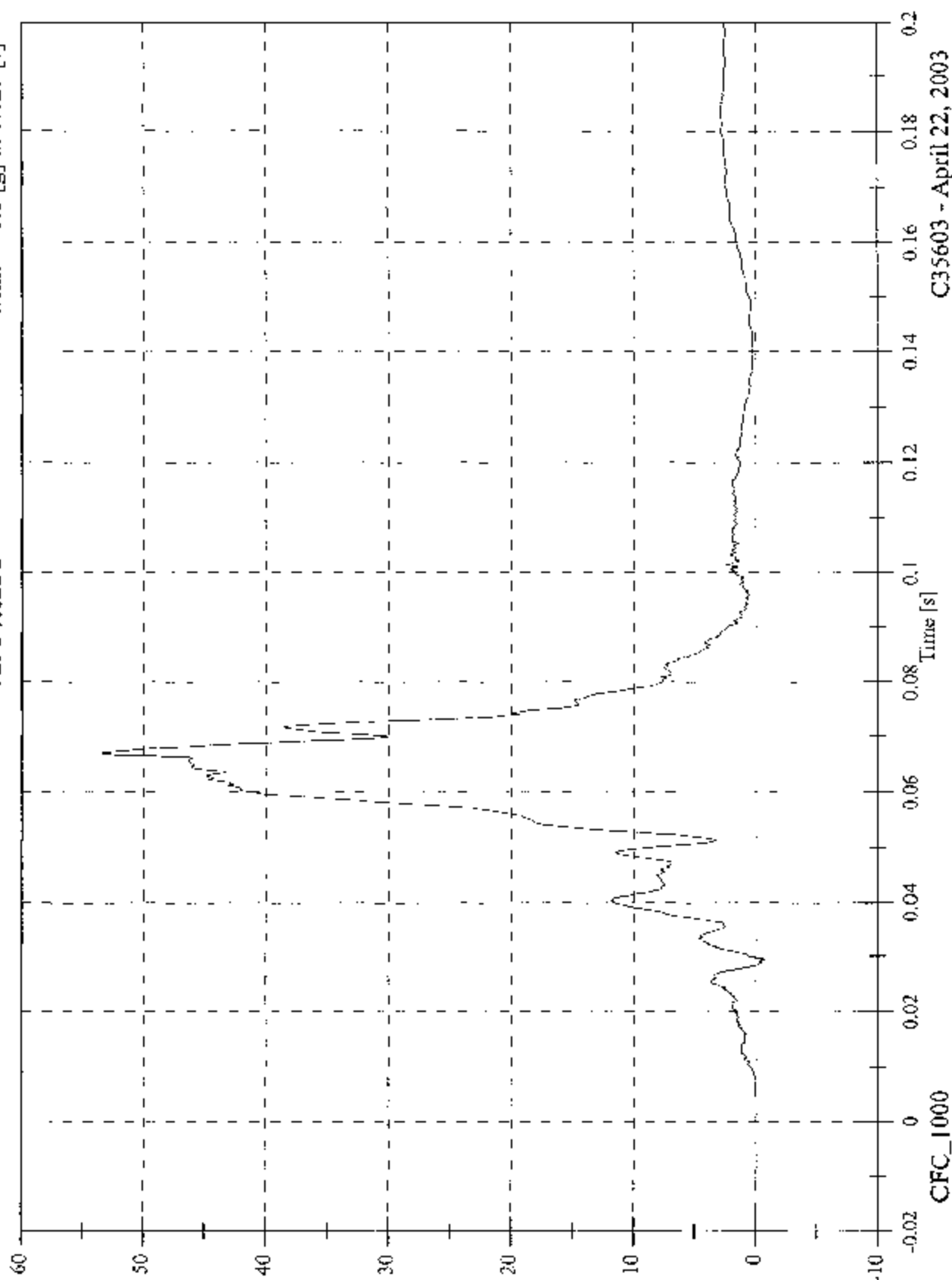
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 53.5 [g] at 0.067 [s]
 Min: -0.8 [g] at 0.029 [s]

V2P1 Head z



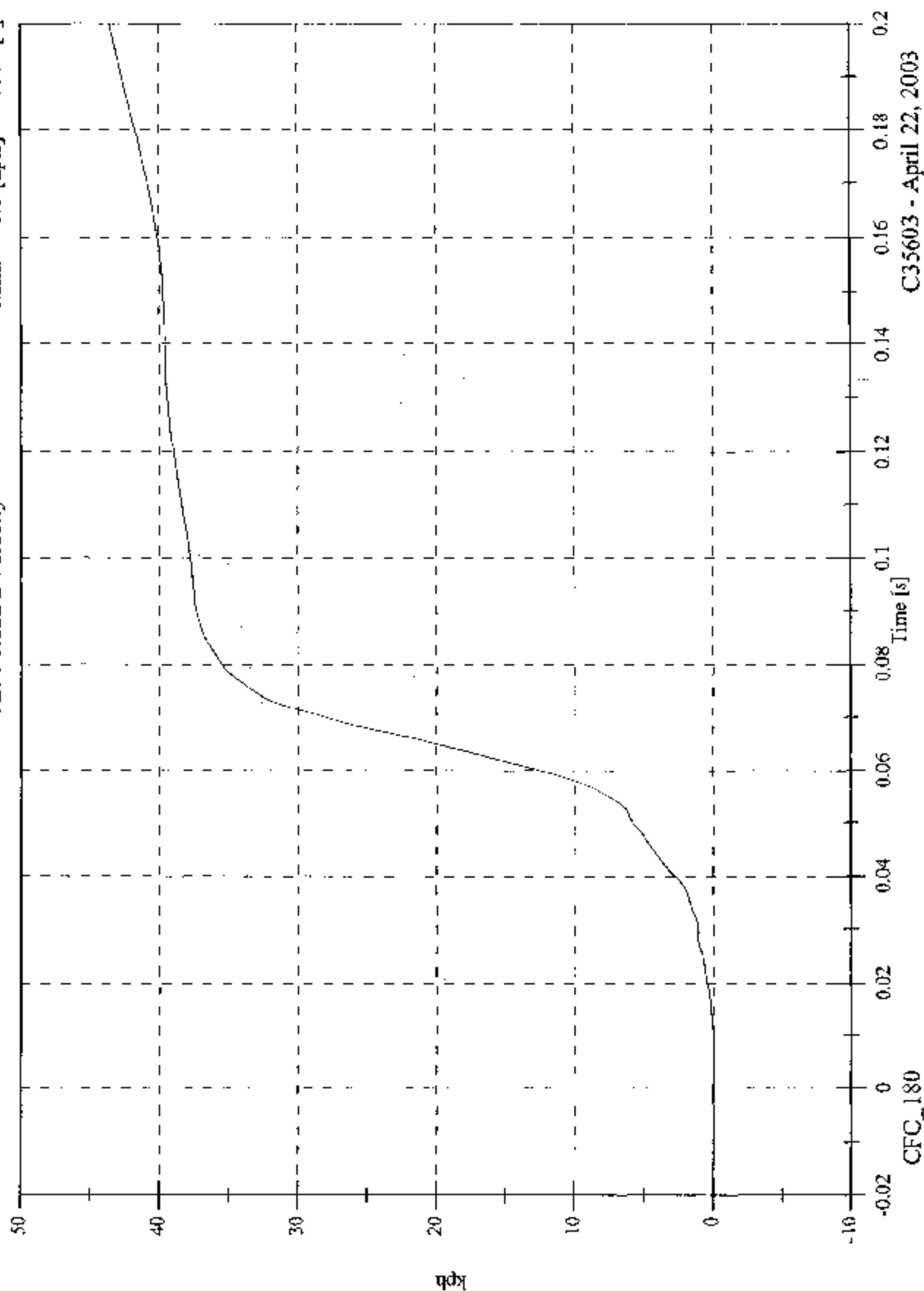
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Head z Velocity

Max: 43.5 [kph] at 0.200 [s]

Min: -0.0 [kph] at 0.004 [s]



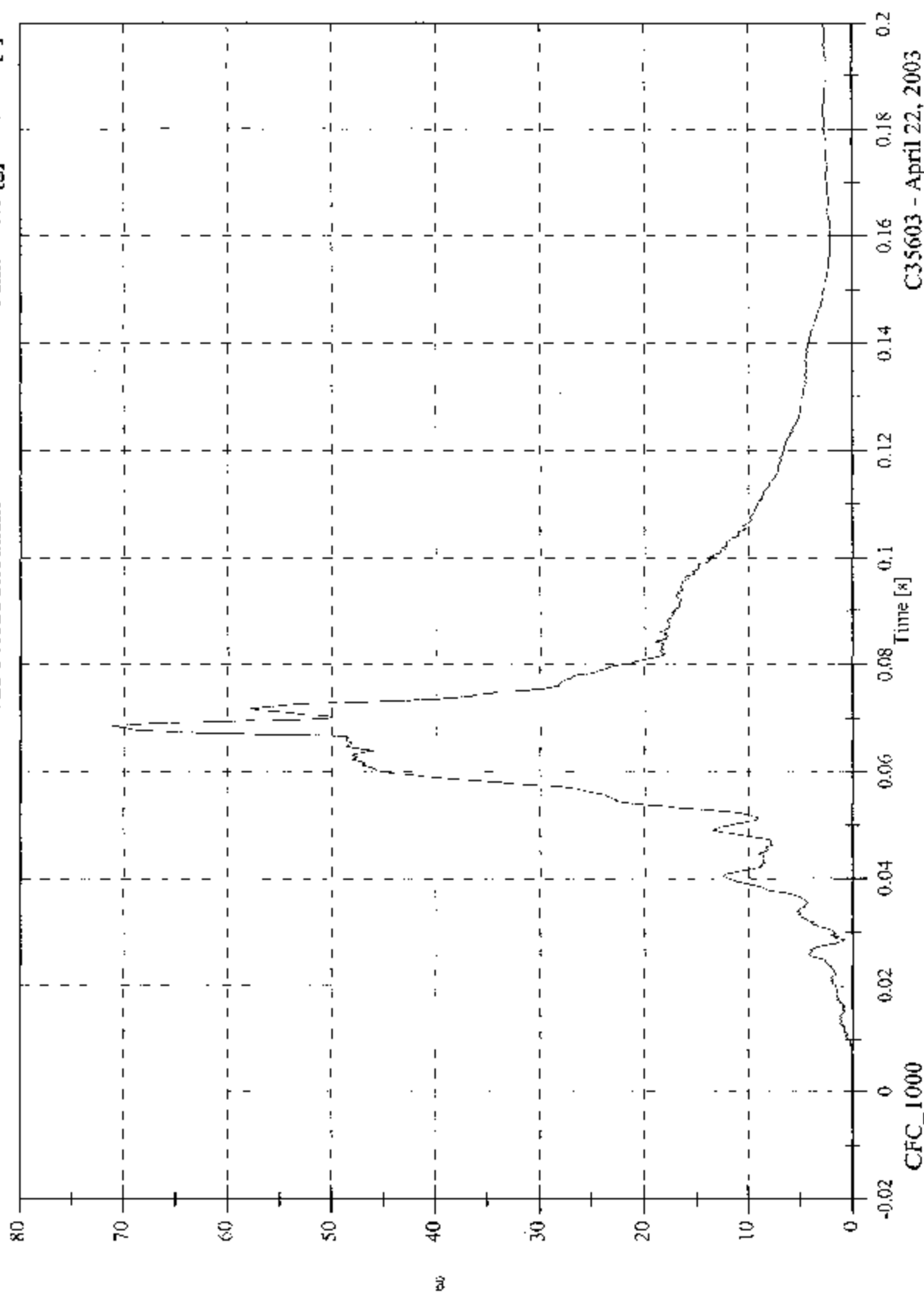
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 71.2 [g] at 0.068 [s]

Min: 0.0 [g] at -0.006 [s]

V2P1 Head Resultant

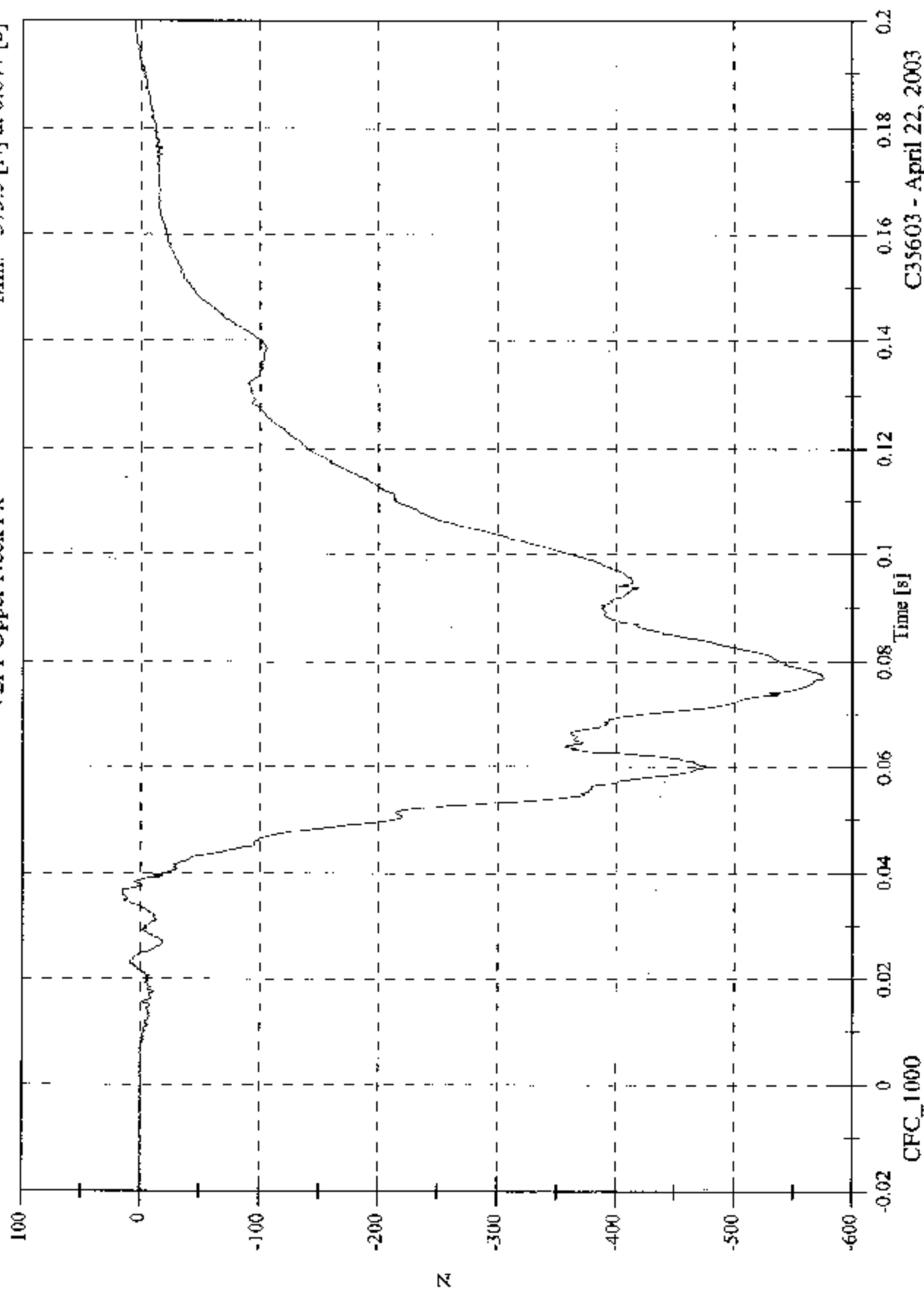


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 16.8 [N] at 0.037 [s]
 Min: -575.5 [N] at 0.077 [s]

V2PI Upper Neck Fx

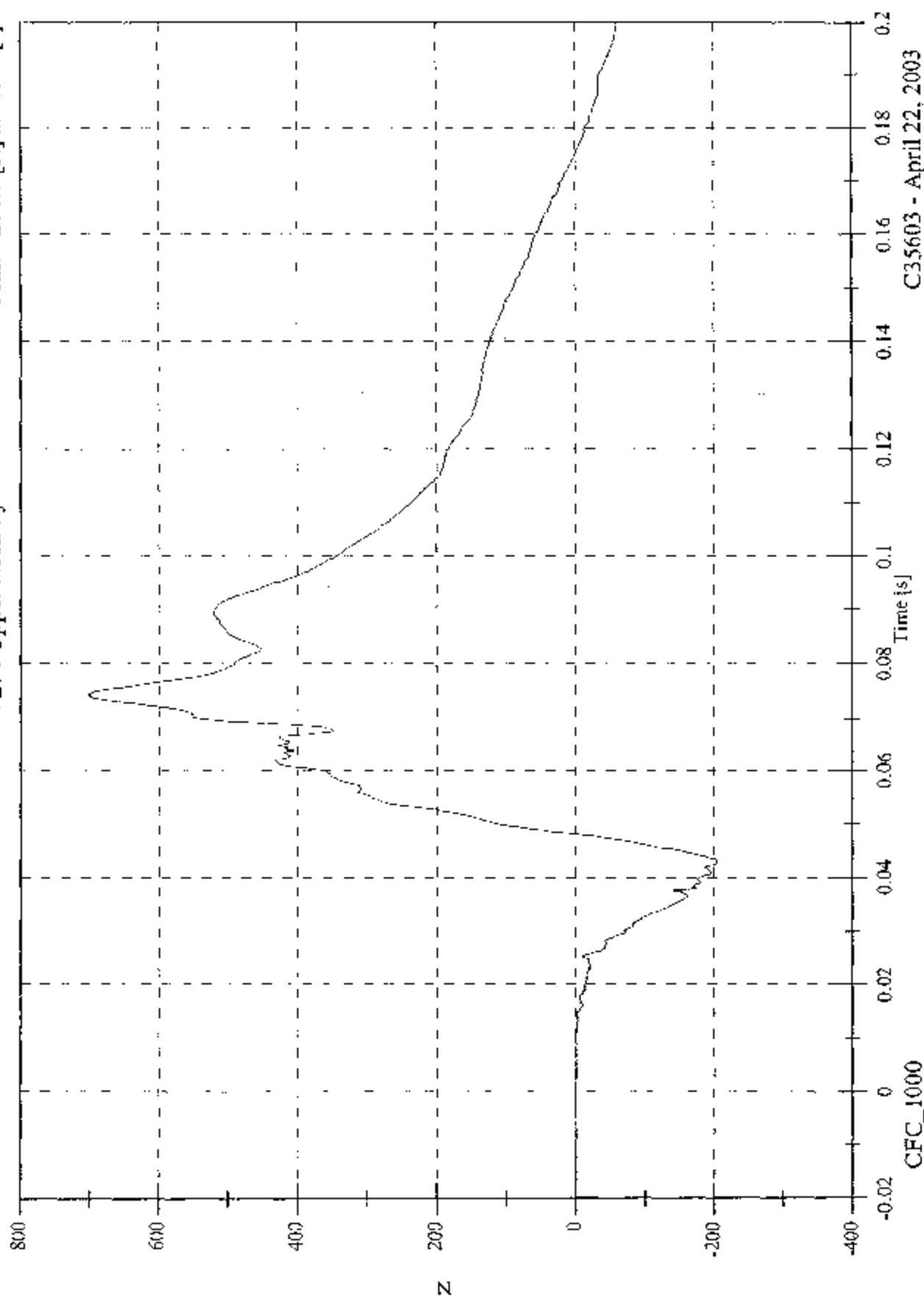


C35603 - April 22, 2003

FMVSS 214D Inducant - 2003 Mitsubishi Outlander

V2P1 Upper Neck Fy

Max: 702.6 [N] at 0.074 [s]
Min: -204.7 [N] at 0.043 [s]

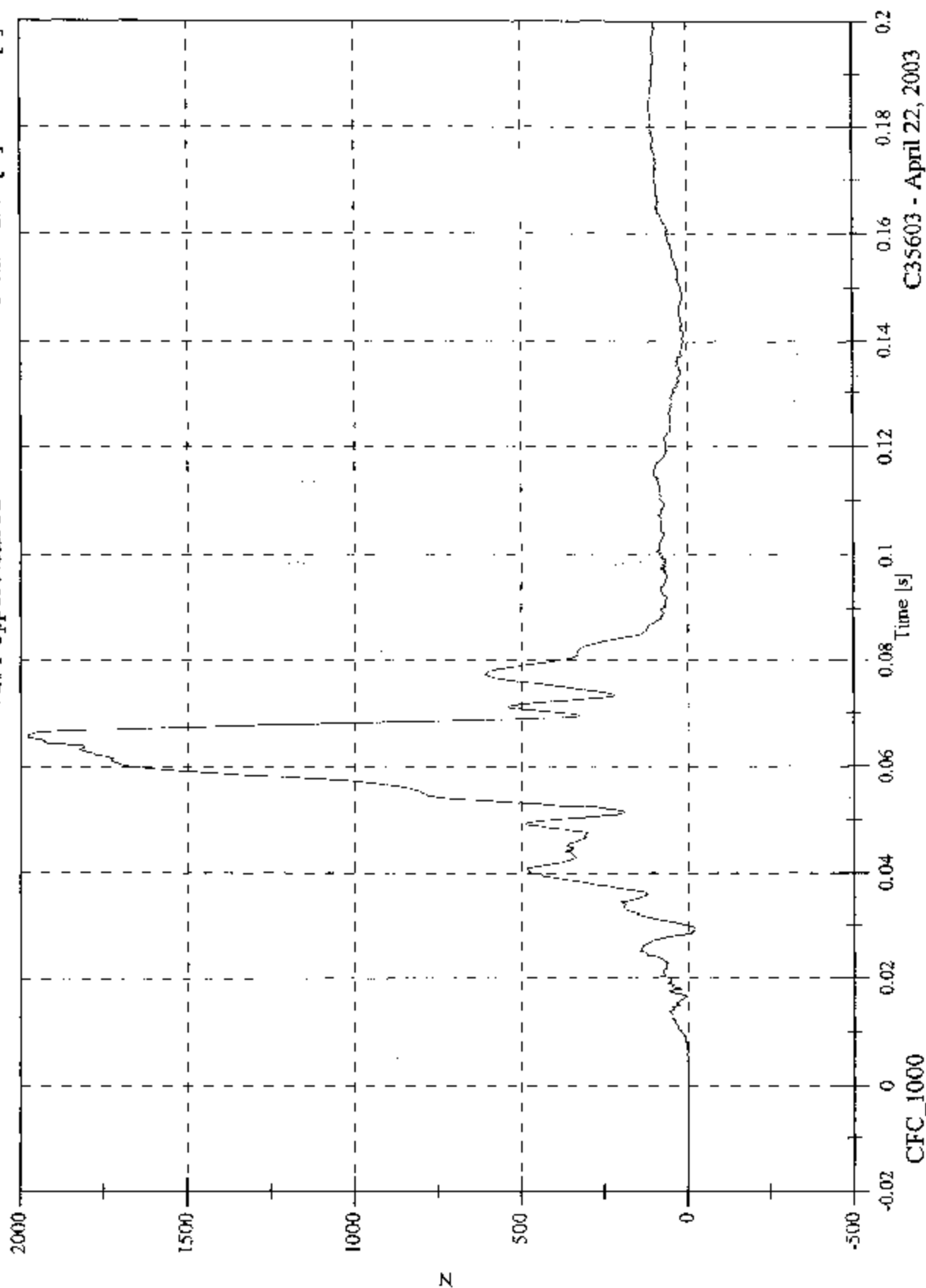


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 1980.8 [N] at 0.066 [s]
Min: -22.0 [N] at 0.029 [s]

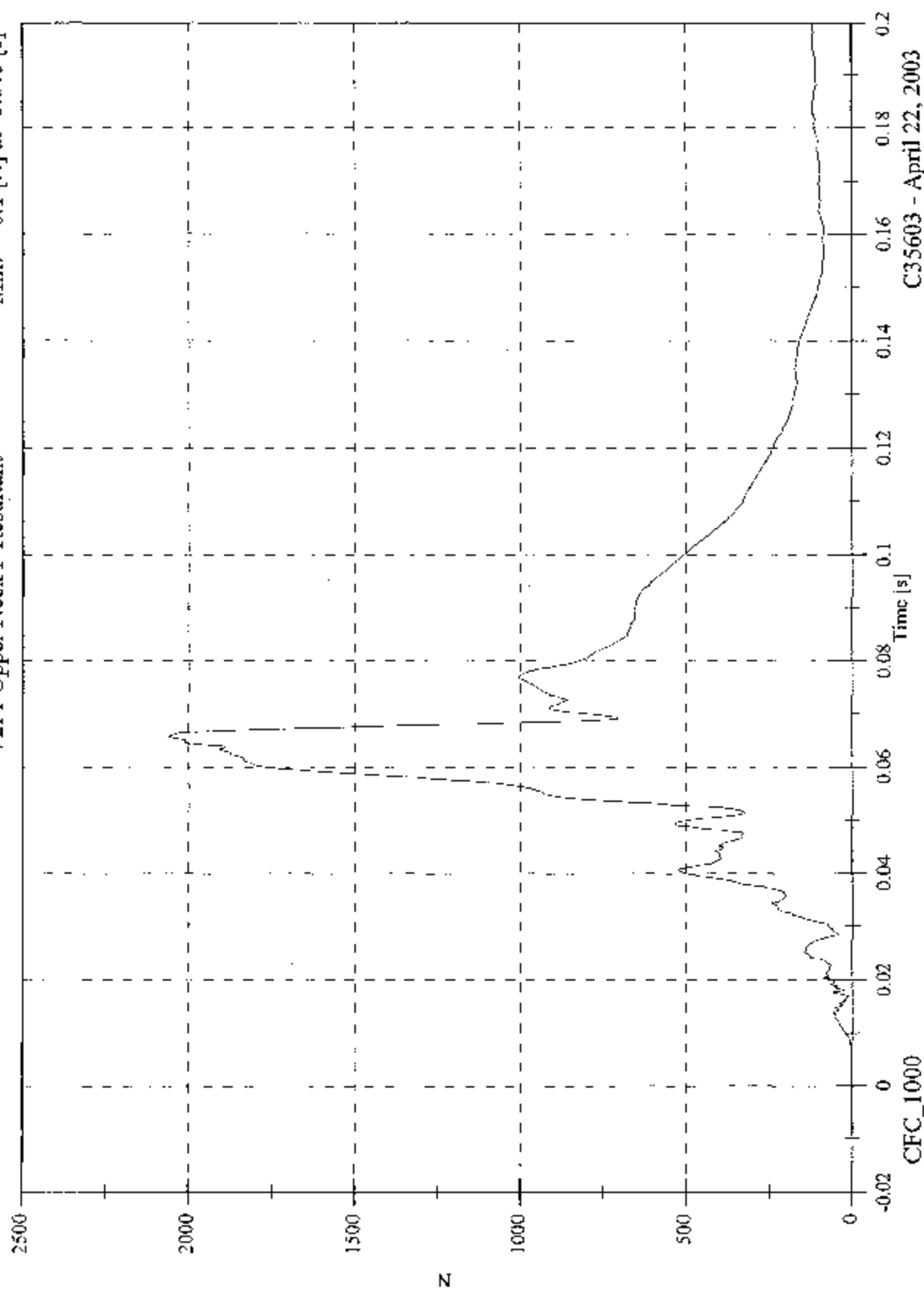
V2P1 Upper Neck Fz



C35603 - April 22, 2003

Max: 2058.0 [N] at 0.066 [s]
Min: 0.1 [N] at -0.015 [s]

FMVSS 214D Indicant - 2003 Mitsubishi Outlander
V2P1 Upper Neck F Resultant

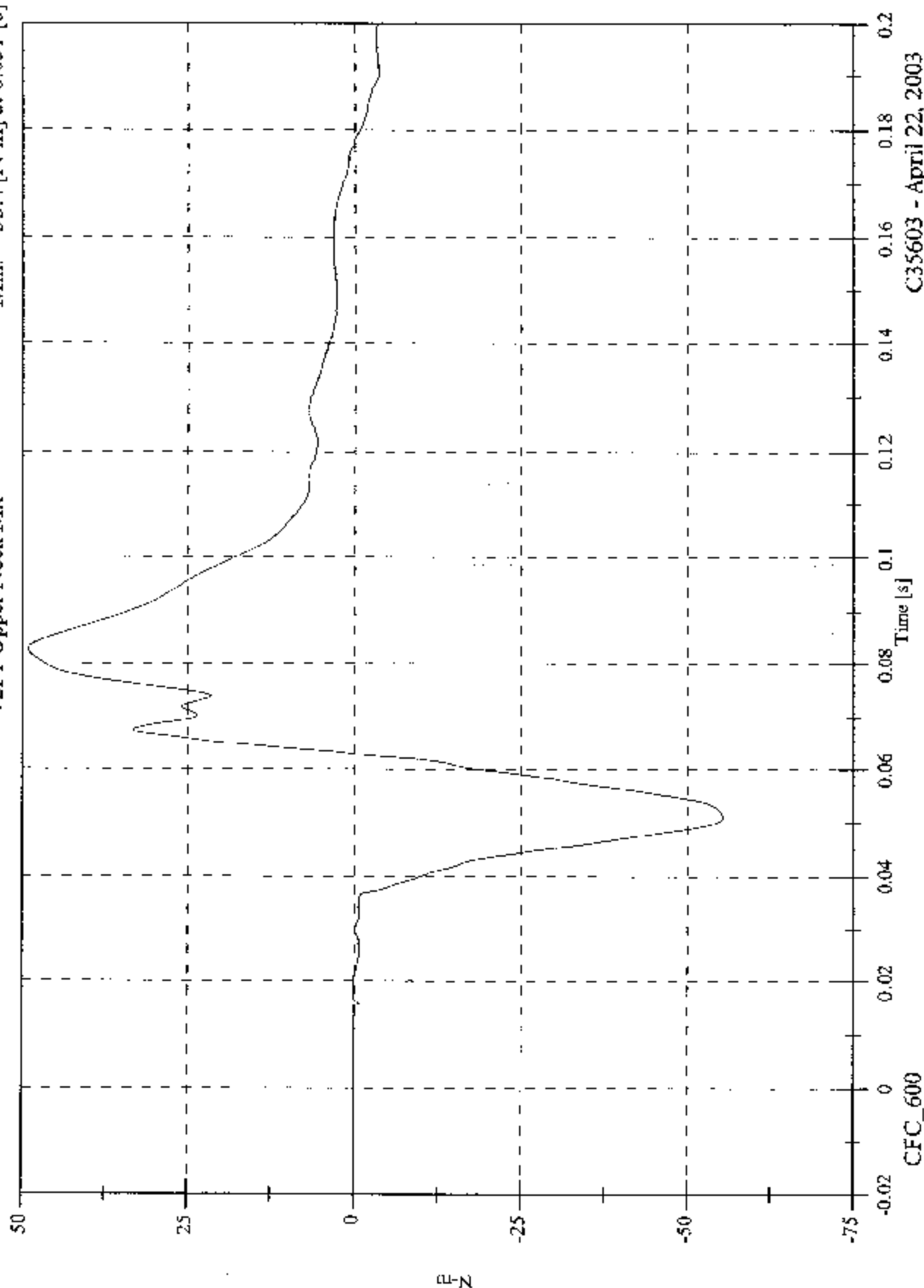


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Upper Neck Mx

Max: 49.2 [N-m] at 0.083 [s]
Min: -55.4 [N-m] at 0.051 [s]

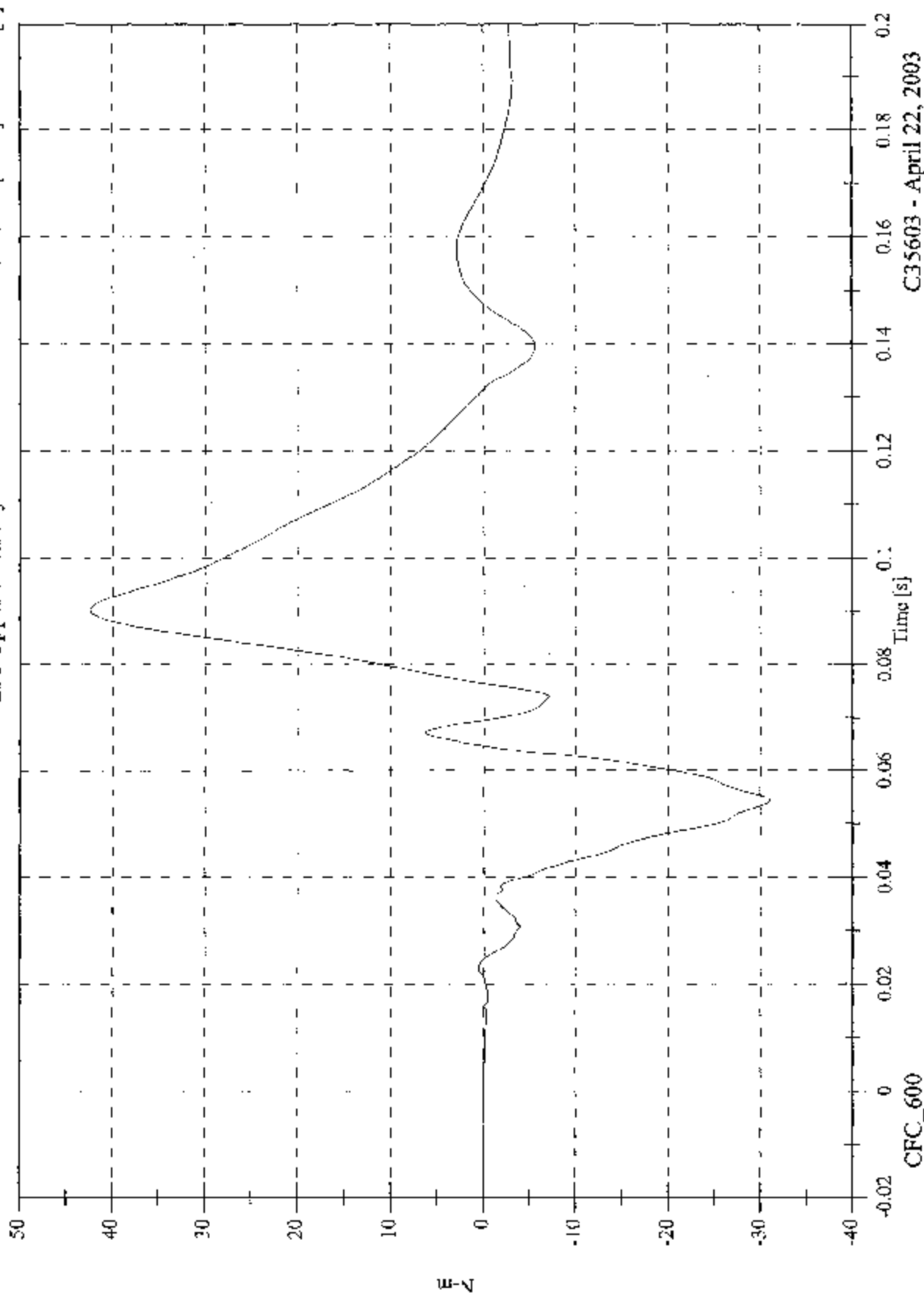


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Upper Neck My

Max: 42.5 [N-m] at 0.090 [s]
Min: -31.0 [N-m] at 0.054 [s]

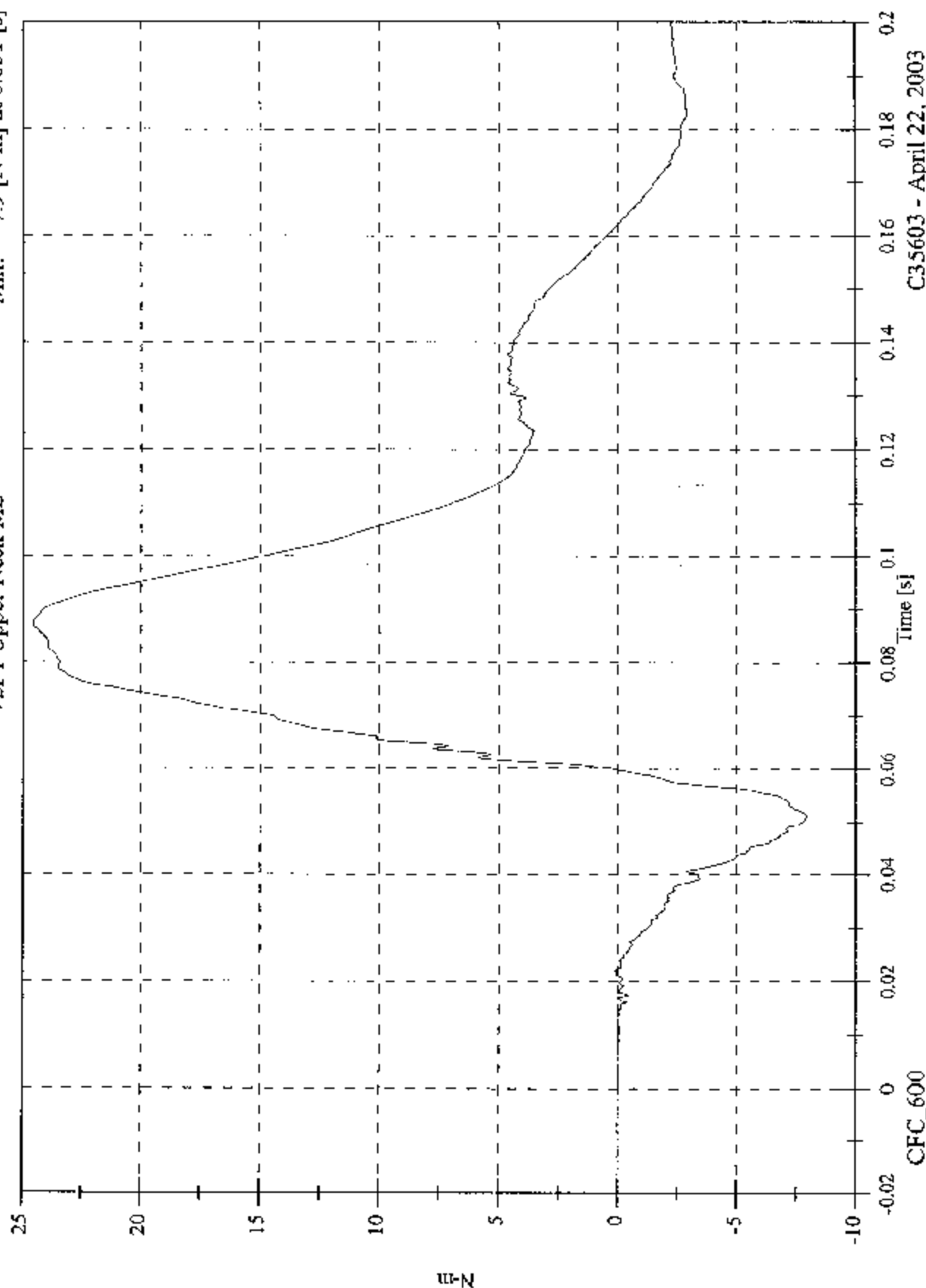


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Upper Neck Mz

Max: 24.6 [N-m] at 0.087 [s]
Min: -7.9 [N-m] at 0.051 [s]

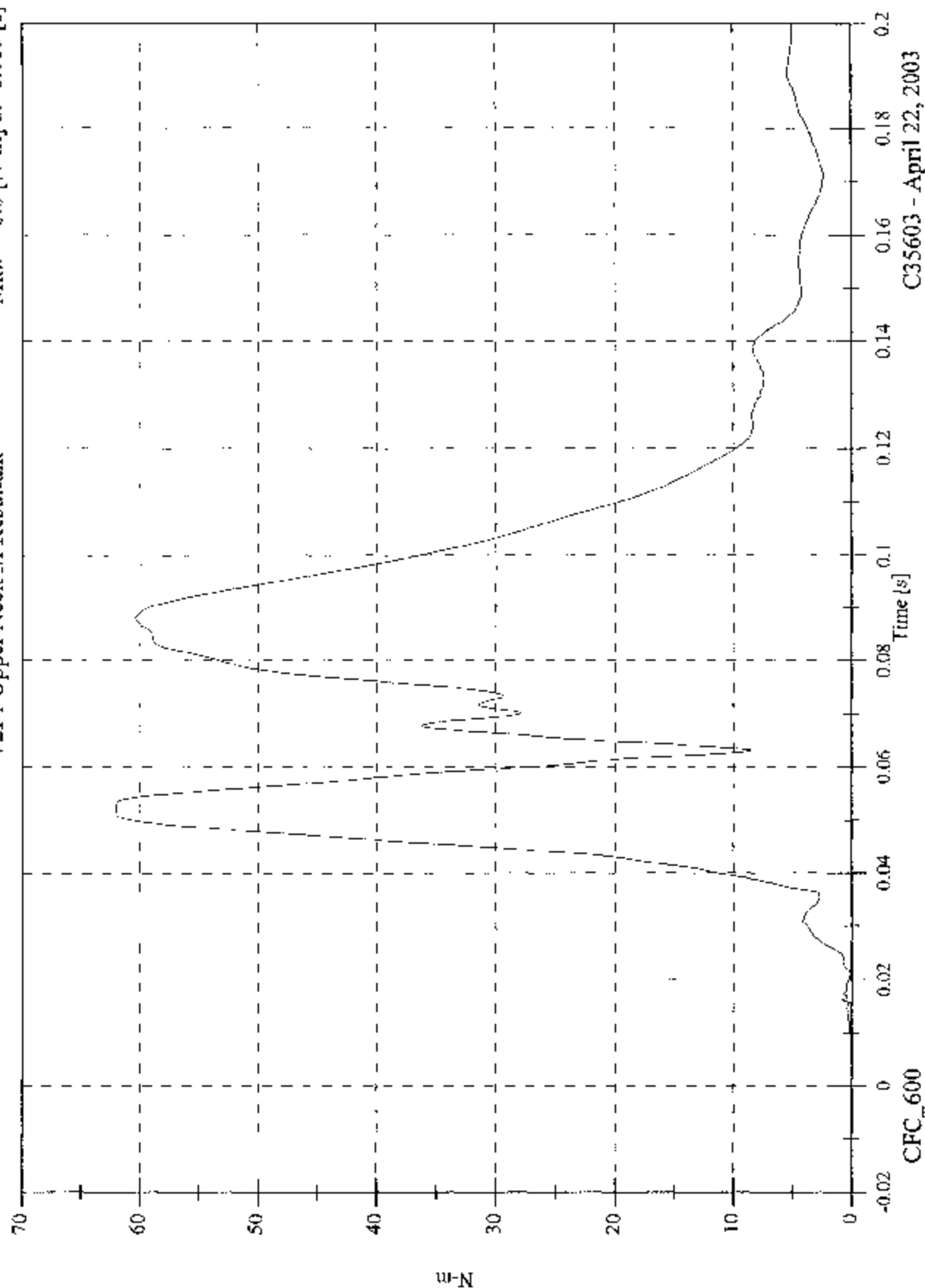


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Upper Neck M Resultant

Max: 62.0 [N-m] at 0.053 [s]
Min: 0.0 [N-m] at -0.015 [s]

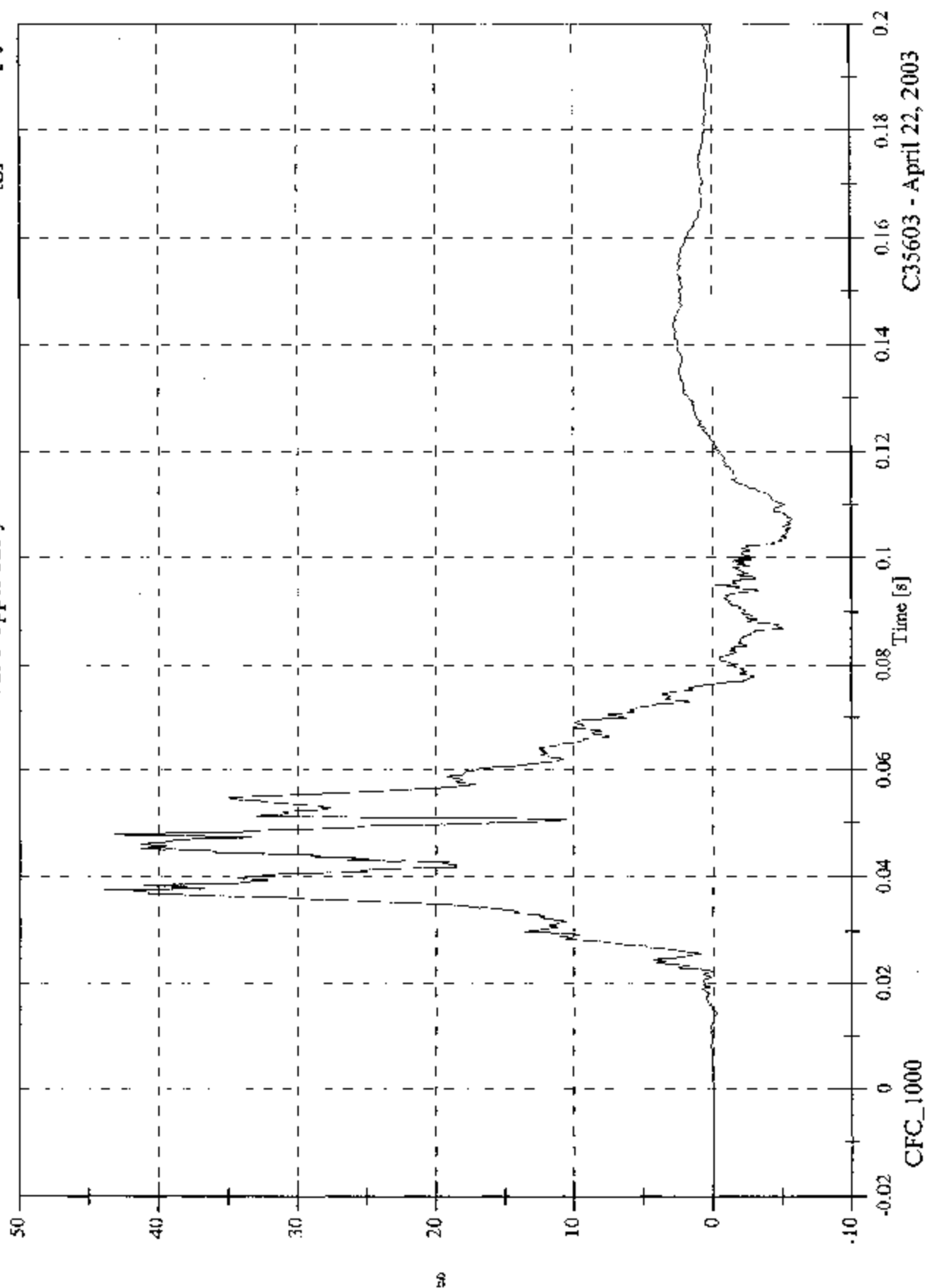


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Upper Rib y

Max: 43.9 [g] at 0.038 [s]
Min: -5.7 [g] at 0.107 [s]



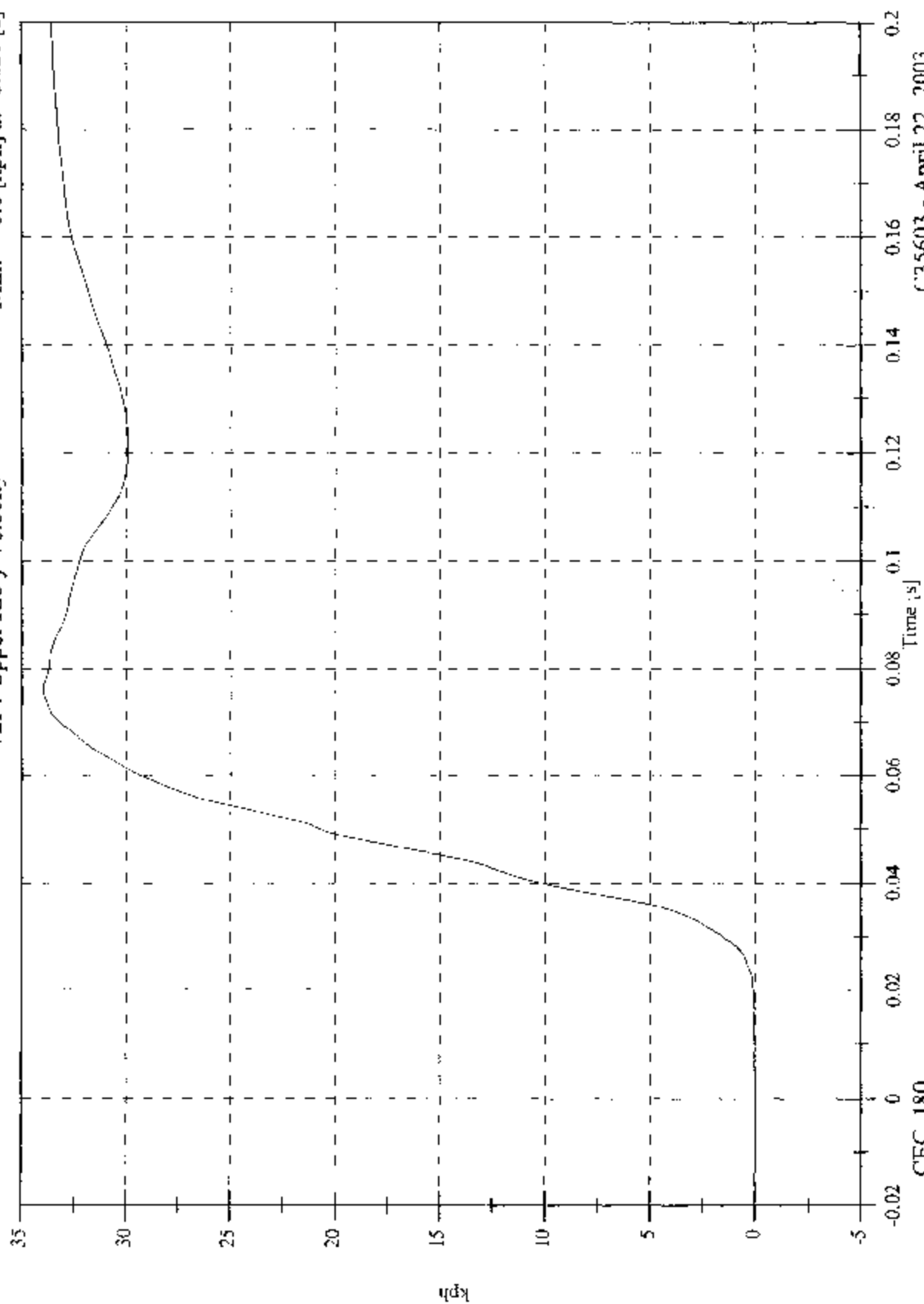
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Upper Rib y Velocity

Max: 34.0 [kph] at 0.076 [s]

Min: -0.0 [kph] at -0.020 [s]

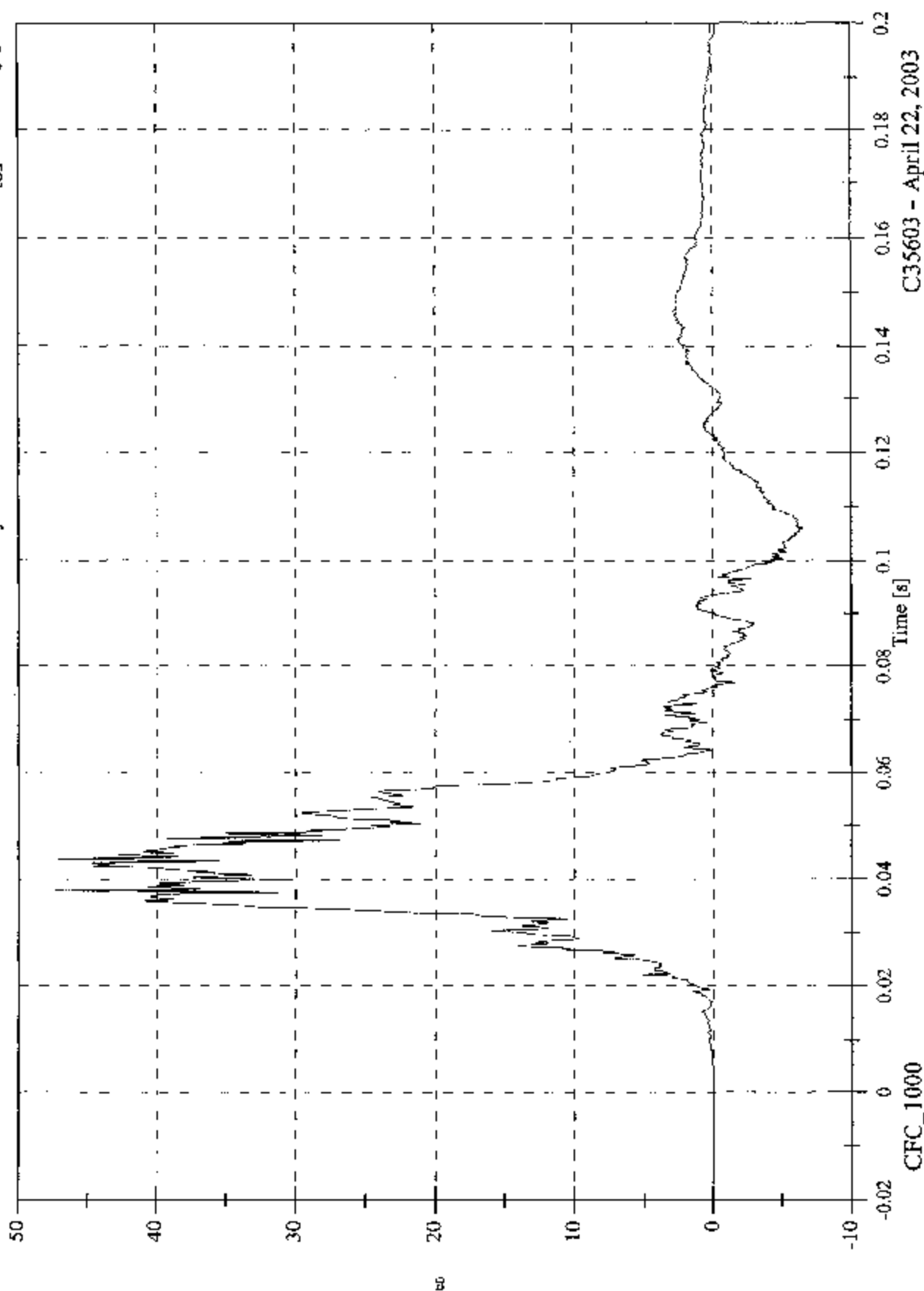


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Lower Rib y

Max: 47.4 [g] at 0.038 [s]
Min: -6.5 [g] at 0.106 [s]



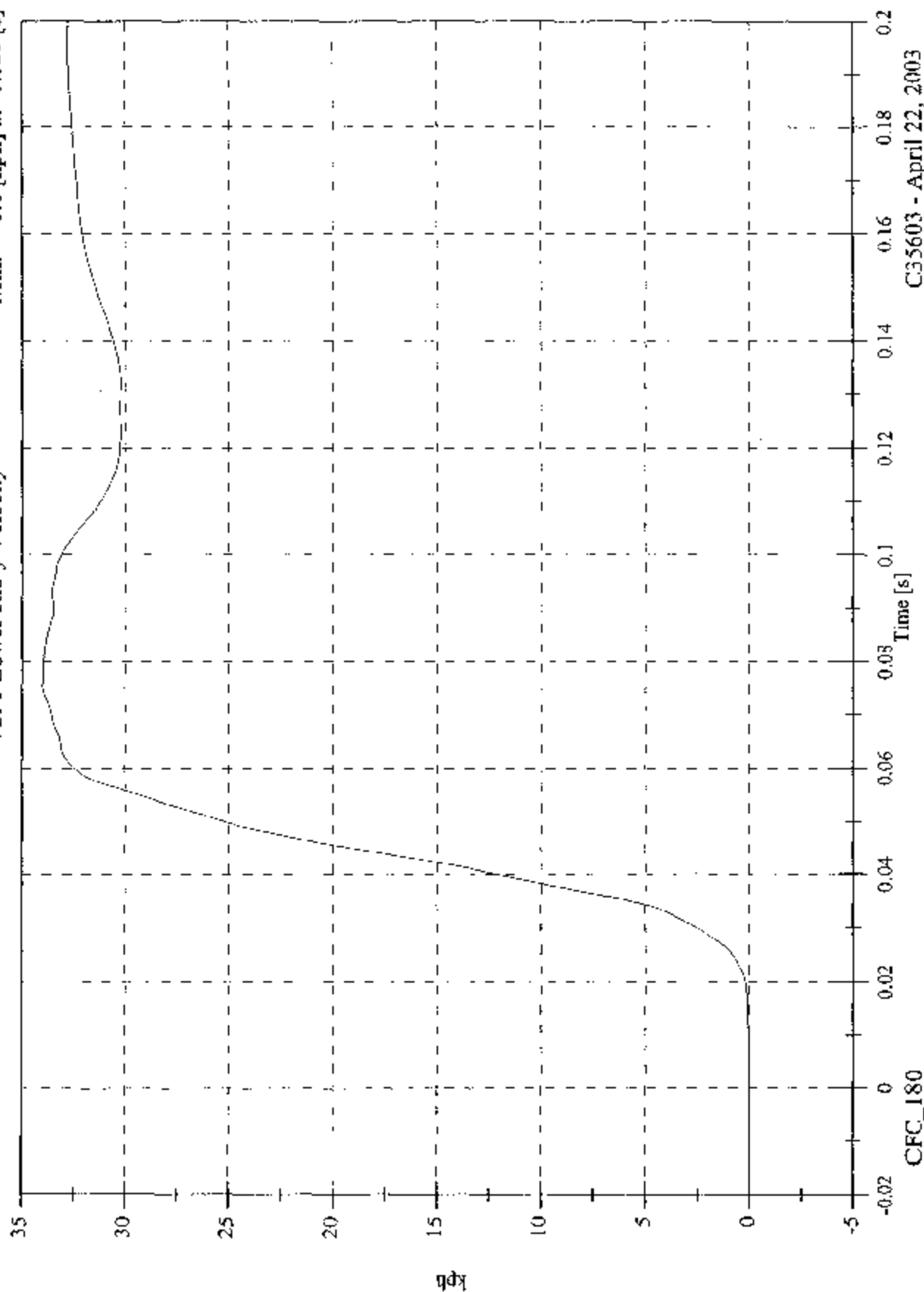
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Lower Rib y Velocity

Max: 34.0 [kph] at 0.076 [s]

Min: -0.0 [kph] at -0.020 [s]

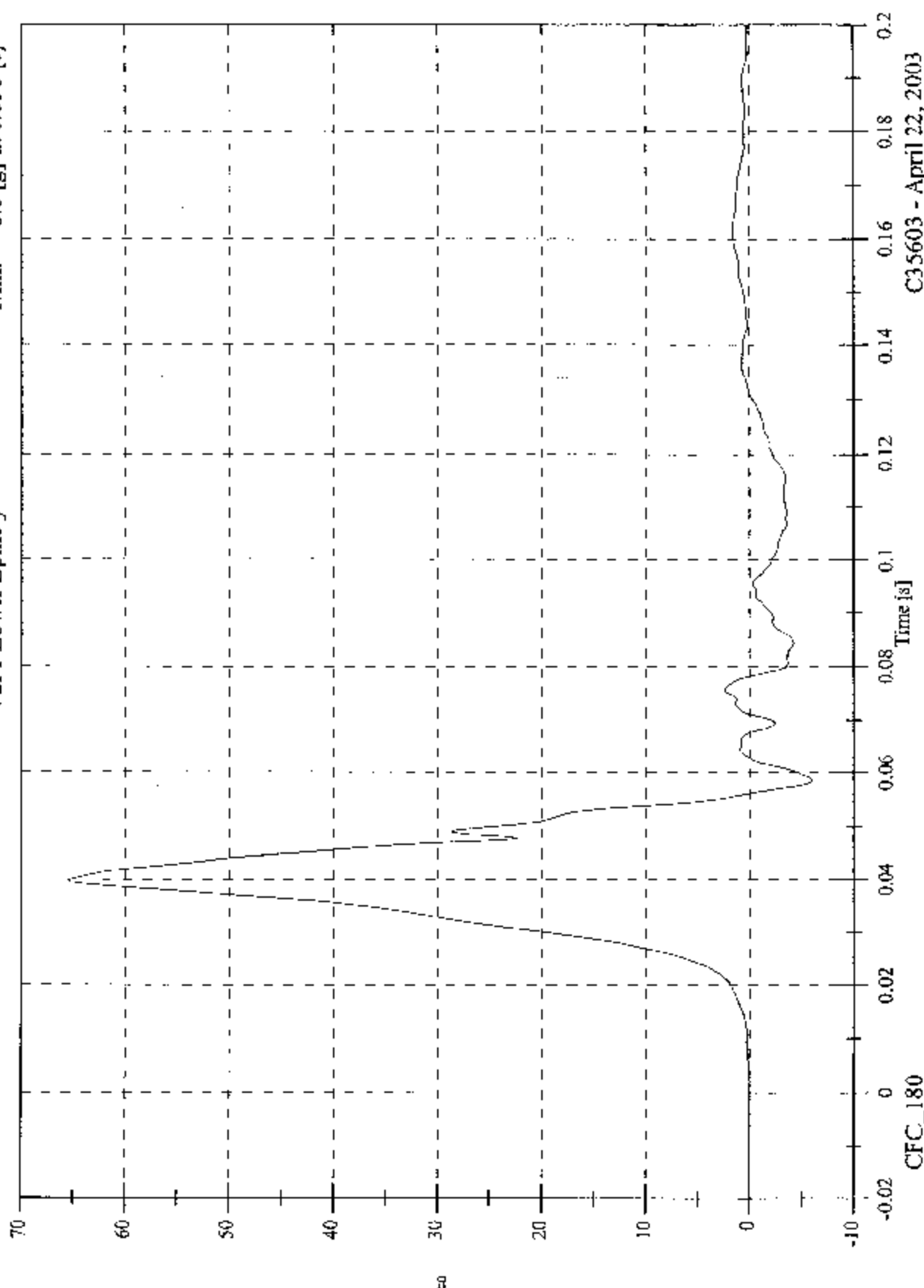


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Lower Spine y

Max: 65.5 [g] at 0.040 [s]
Min: -6.0 [g] at 0.058 [s]

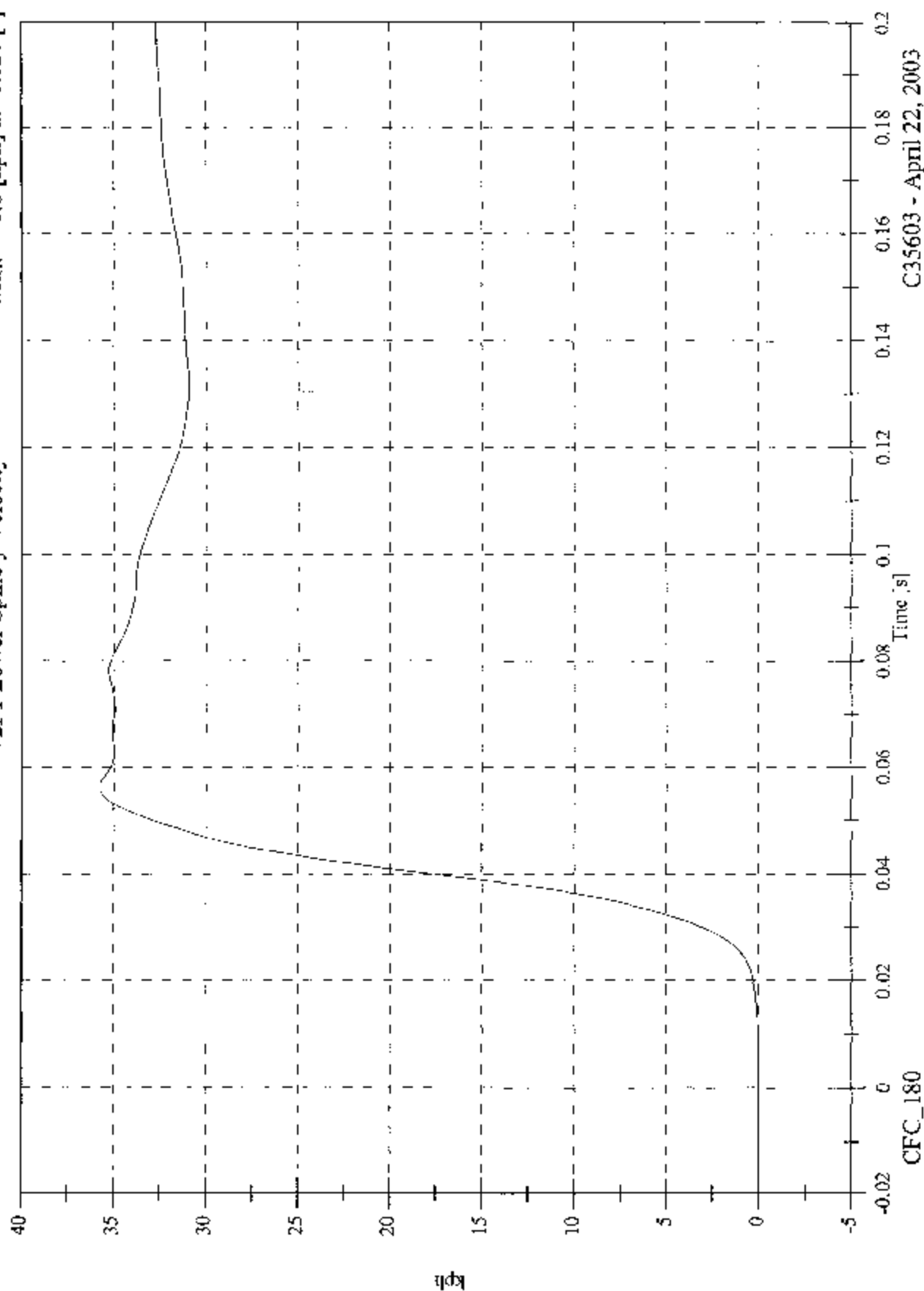


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Lower Spine y Velocity

Max: 35.7 [kph] at 0.056 [s]
Min: -0.0 [kph] at -0.020 [s]

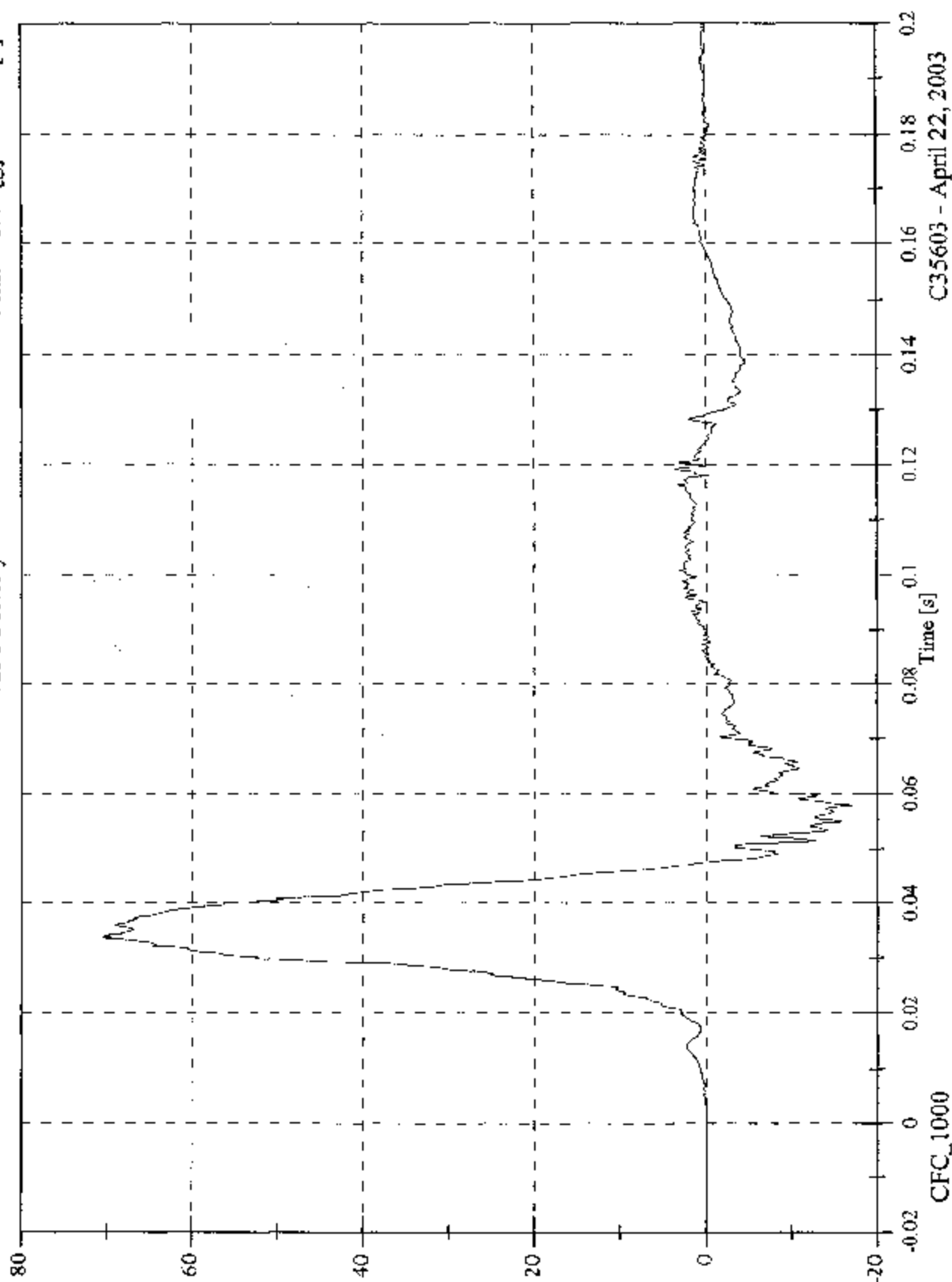


C35603 - April 22, 2003

FMVSS 214D Inducant - 2003 Mitsubishi Outlander

Max: 70.7 [g] at 0.034 [s]
Min: -17.1 [g] at 0.058 [s]

V2P1 Pelvic y

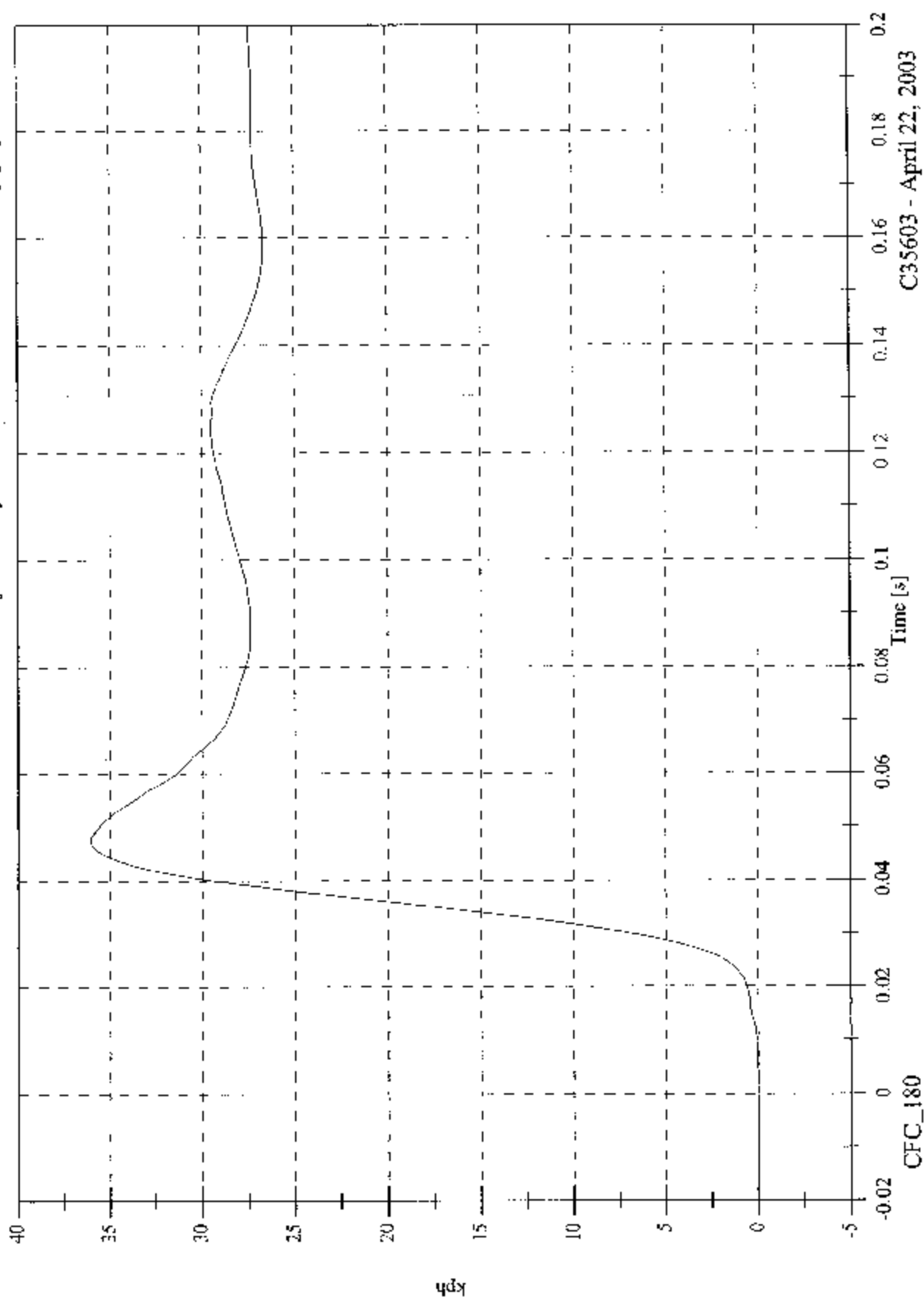


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Pelvic y Velocity

Max: 36.1 [kph] at 0.047 [s]
Min: -0.0 [kph] at -0.019 [s]



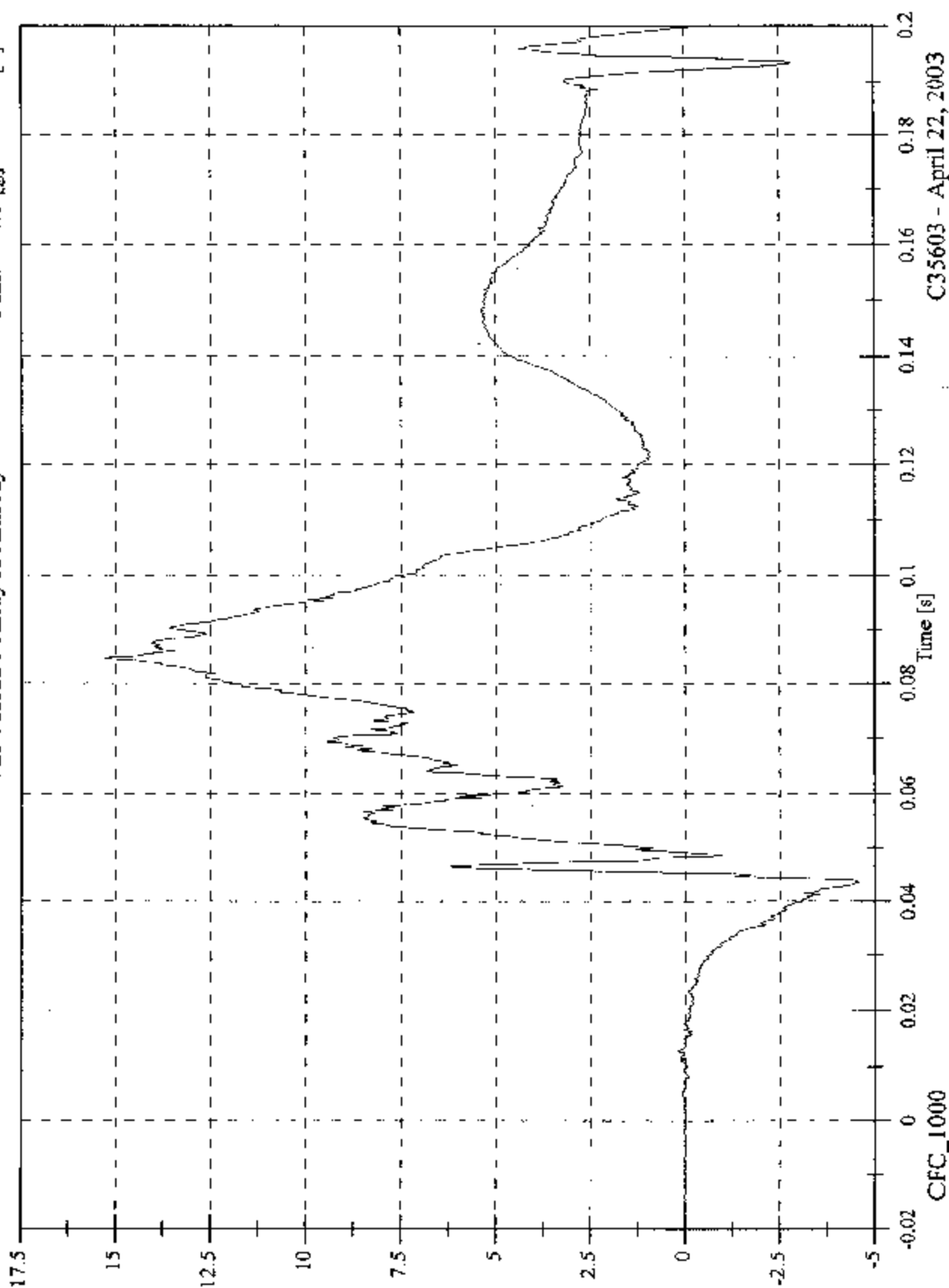
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Head 9 Array X Arm Ay

Max: 15.3 [g] at 0.084 [s]

Min: -4.6 [g] at 0.044 [s]

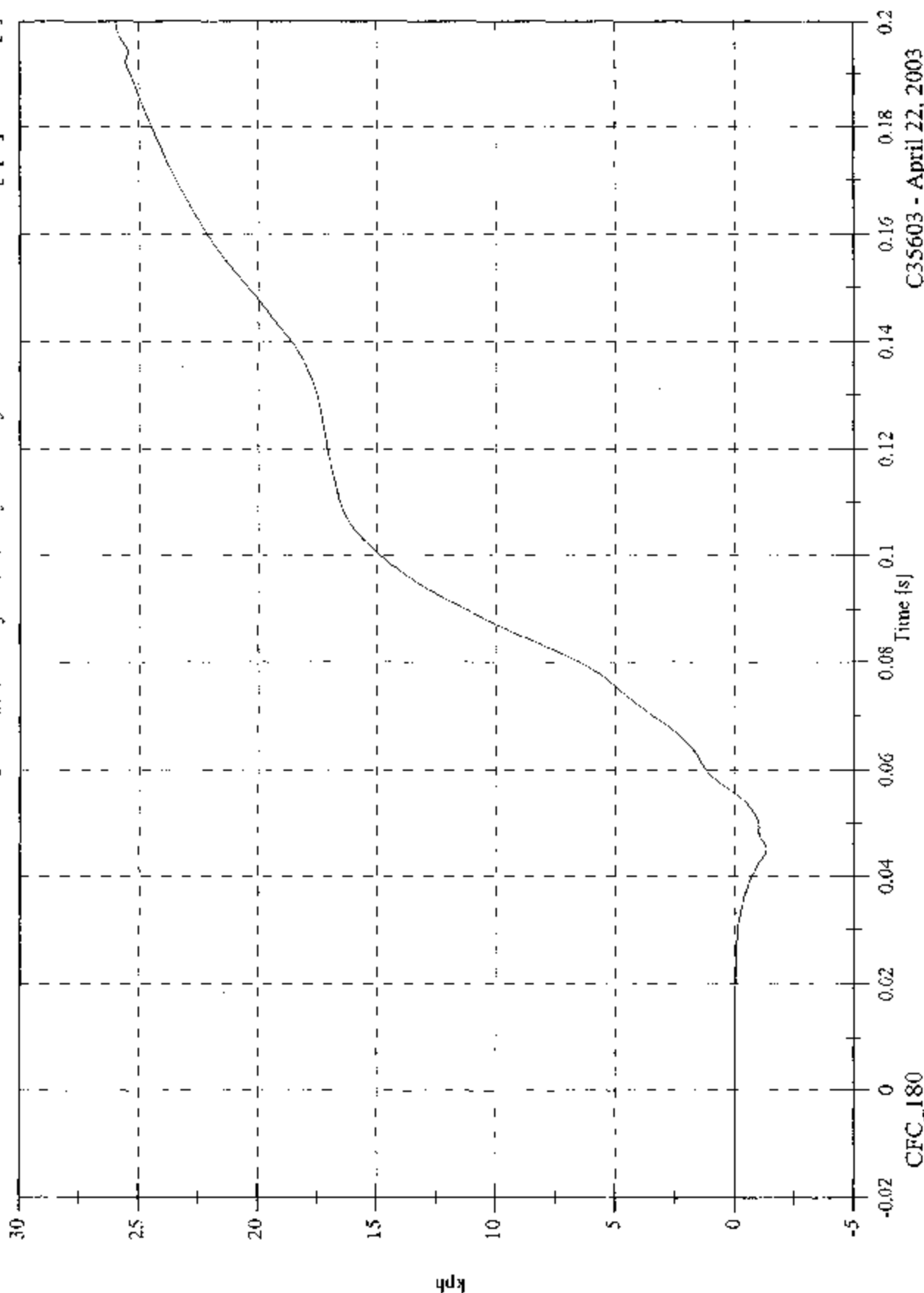


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Head 9 Array X Arm Ay Velocity

Max: 26.0 [kph] at 0.200 [s]
Min: -1.3 [kph] at 0.045 [s]

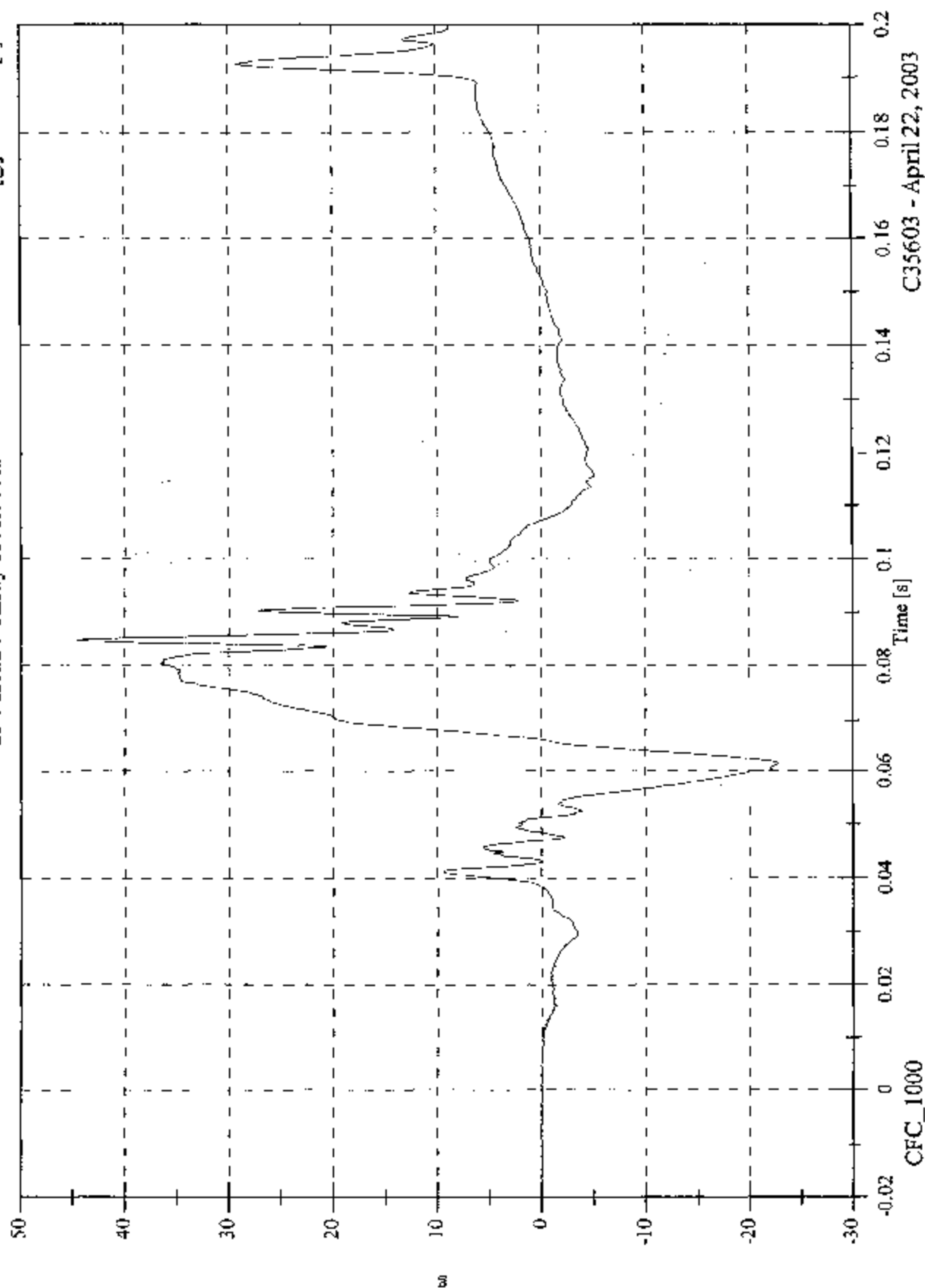


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Head 9 Array X Arm Az

Max: 44.6 [g] at 0.085 [s]
Min: -22.8 [g] at 0.062 [s]

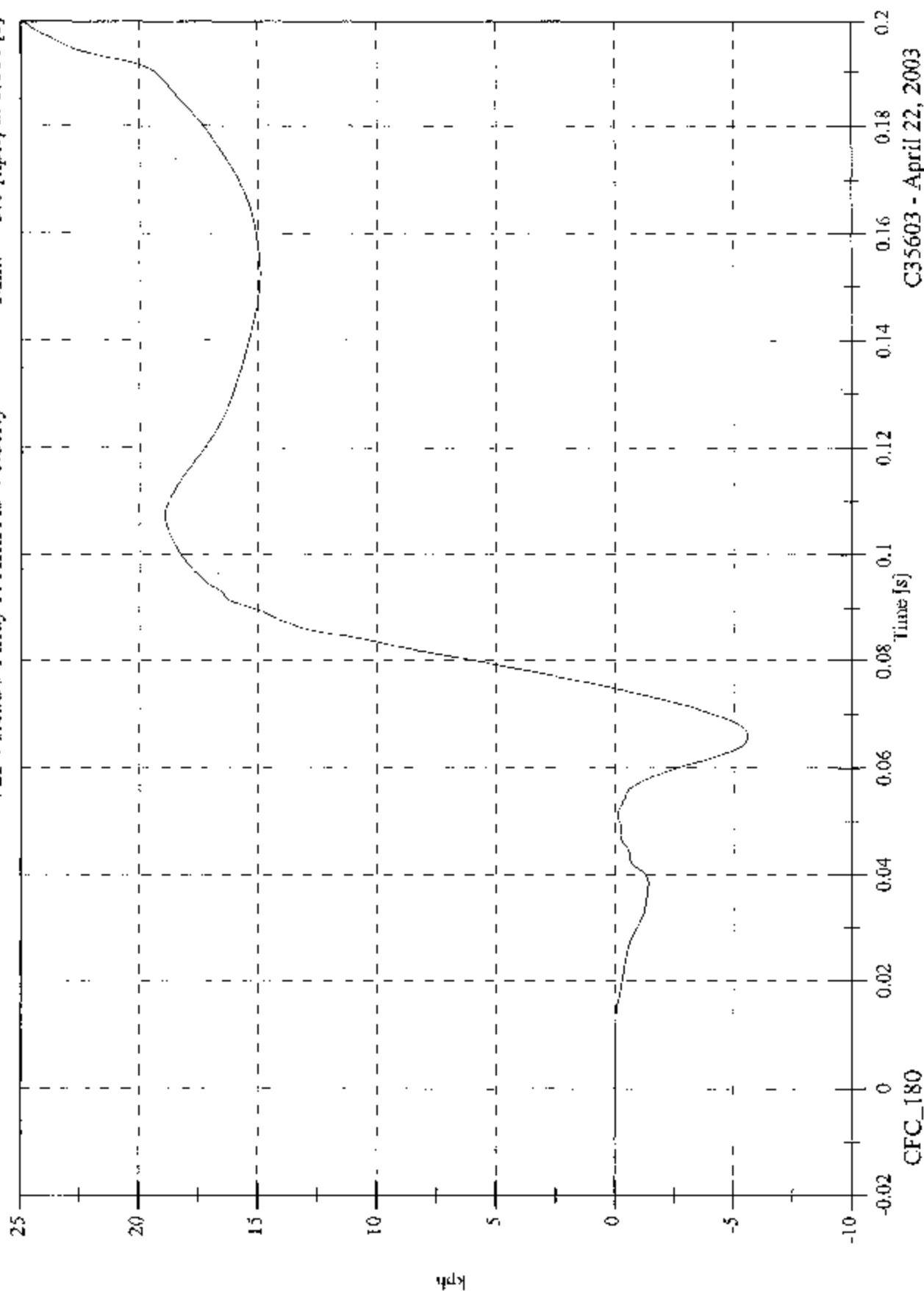


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Head 9 Array X Arm Az Velocity

Max: 24.9 [kph] at 0.200 [s]
Min: -5.6 [kph] at 0.066 [s]

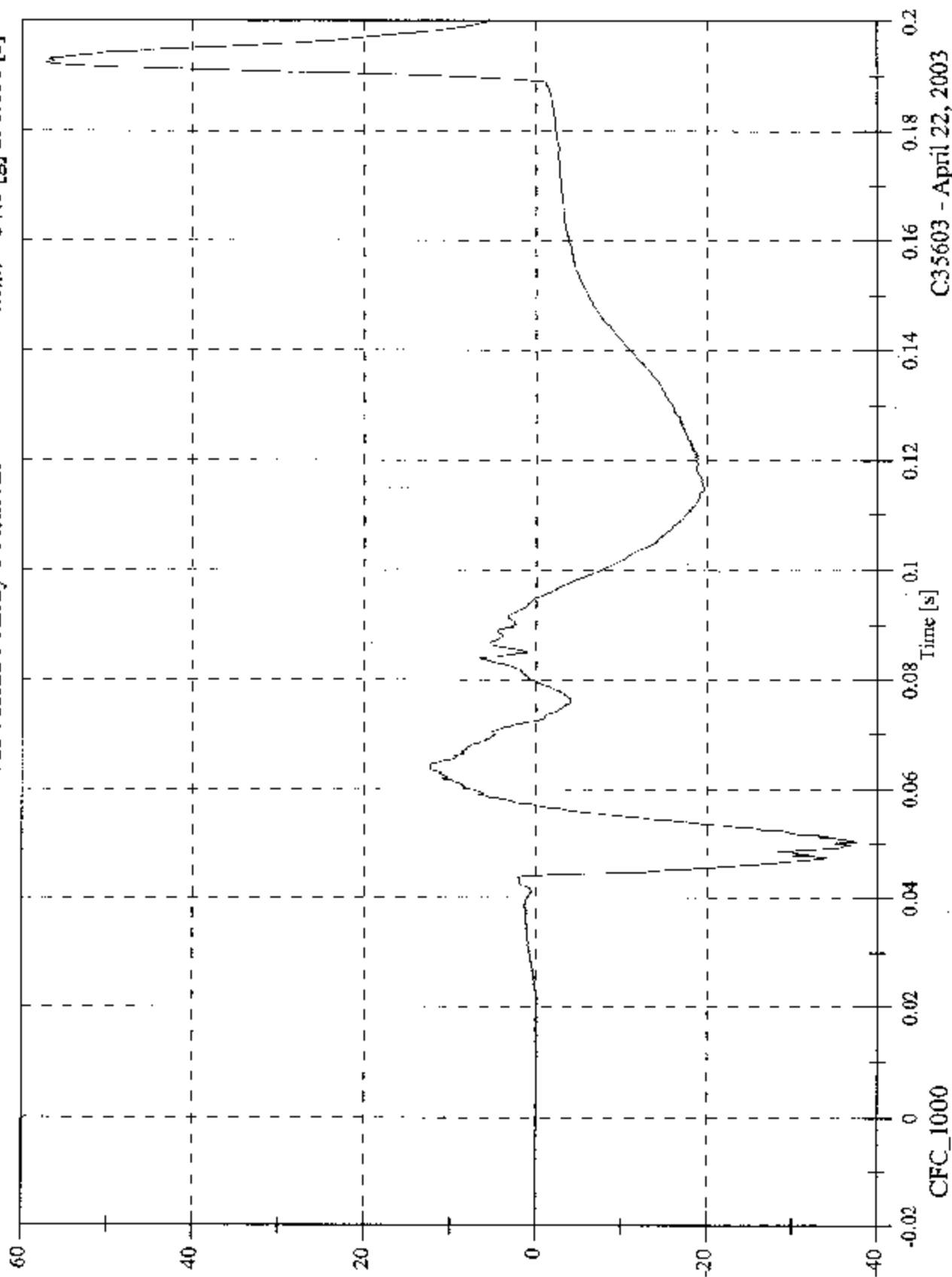


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Head 9 Array Y Arm Ax

Max: 57.2 [g] at 0.192 [s]
Min: -37.6 [g] at 0.050 [s]

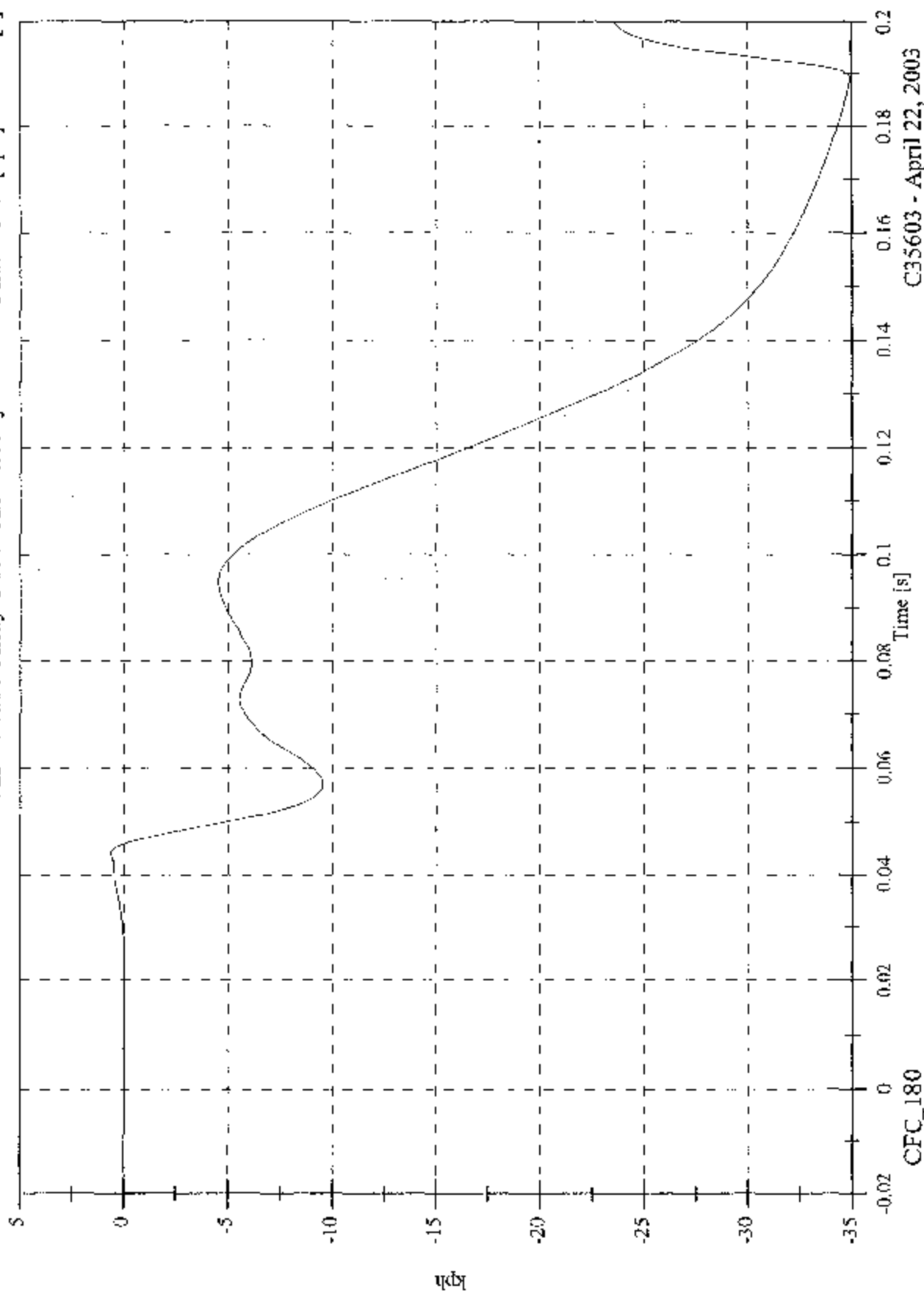


C35603 - April 22, 2003

FMVSS 214D Inducant - 2003 Mitsubishi Outlander

V2P4 Head 9 Array Y Arm Ax Velocity

Max: 0.7 [kph] at 0.044 [s]
Min: -34.9 [kph] at 0.189 [s]

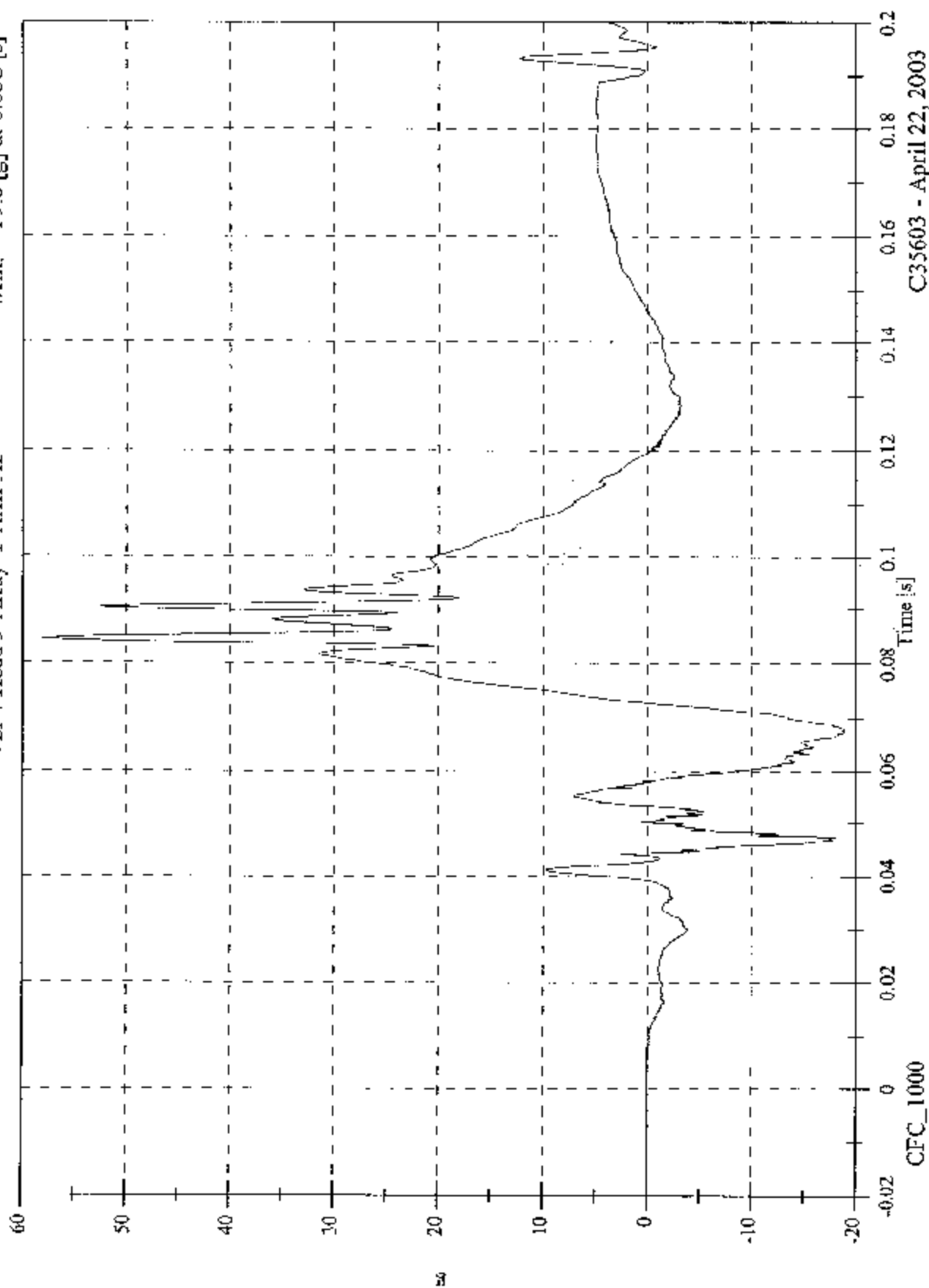


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Head 9 Array Y Arm Az

Max: 58.1 [g] at 0.085 [s]
Min: -19.0 [g] at 0.068 [s]



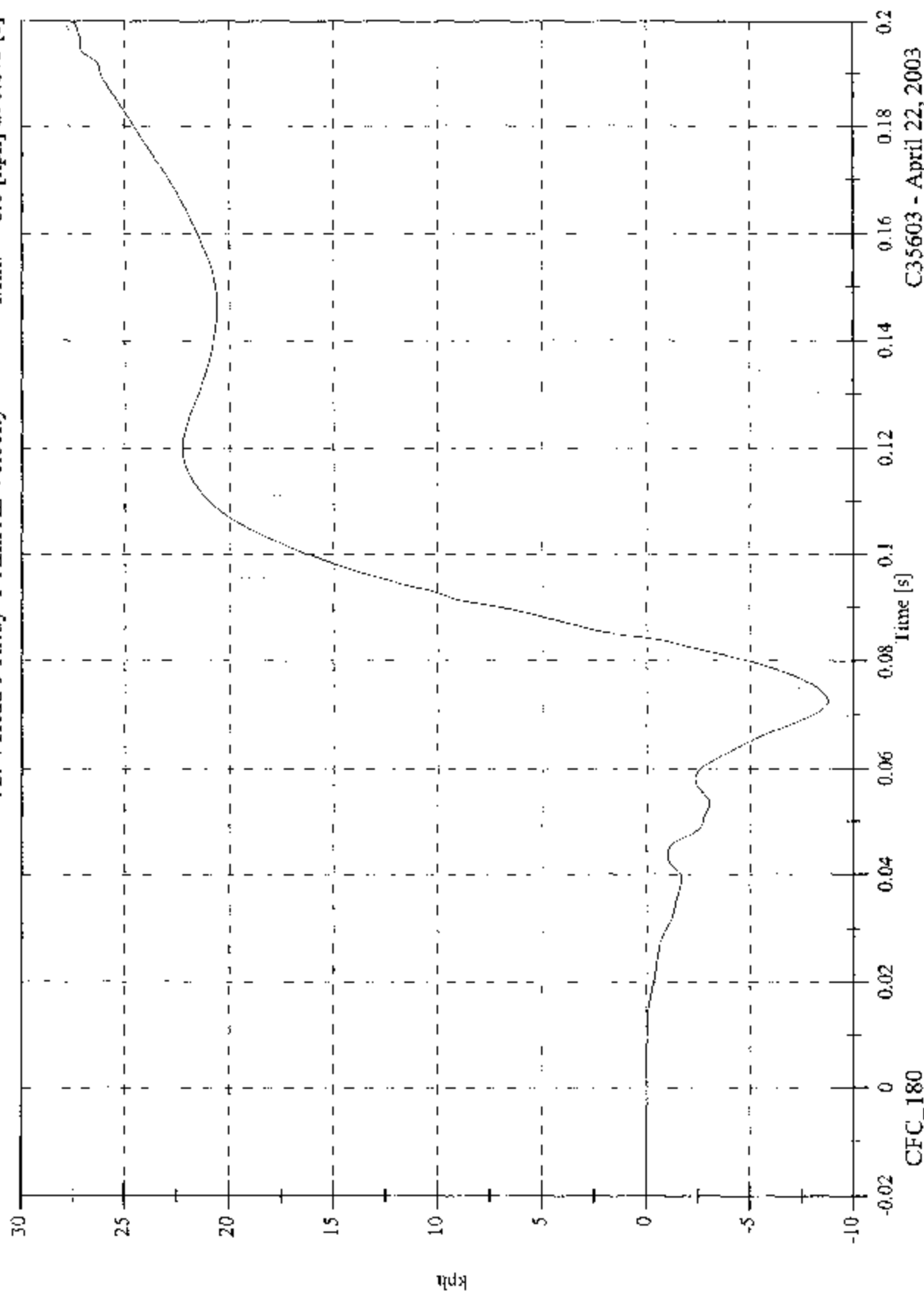
C35603 - April 22, 2003

FMVSS 214D Inducant - 2003 Mitsubishi Outlander

V2P4 Head 9 Array Y Arm Az Velocity

Max: 27.4 [kph] at 0.200 [s]

Min: -8.8 [kph] at 0.073 [s]

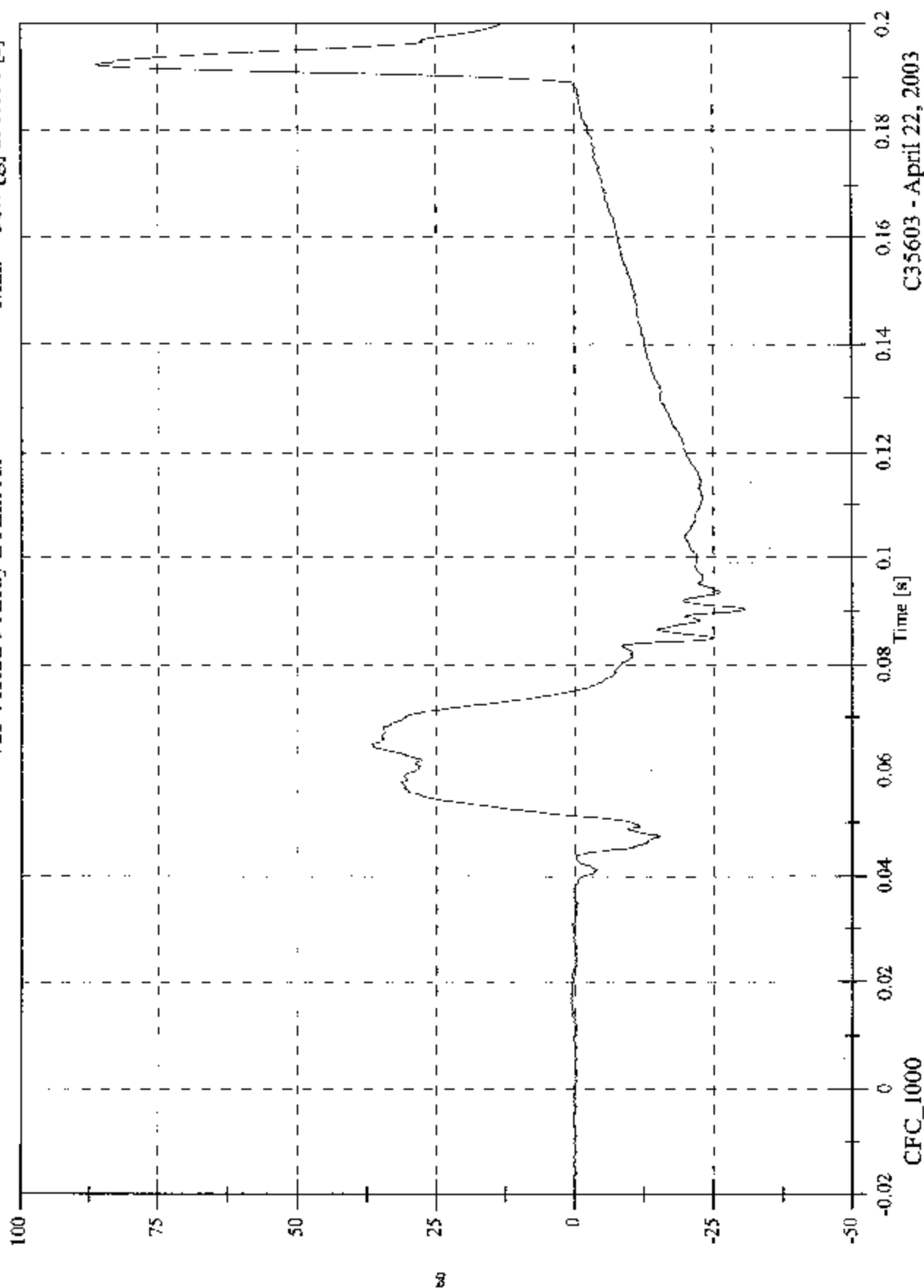


C35603 - April 22, 2003

FMVSS 214D Inducant - 2003 Mitsubishi Outlander

V2P4 Head 9 Array Z Arm Ax

Max: 86.3 [g] at 0.192 [s]
Min: -30.7 [g] at 0.090 [s]

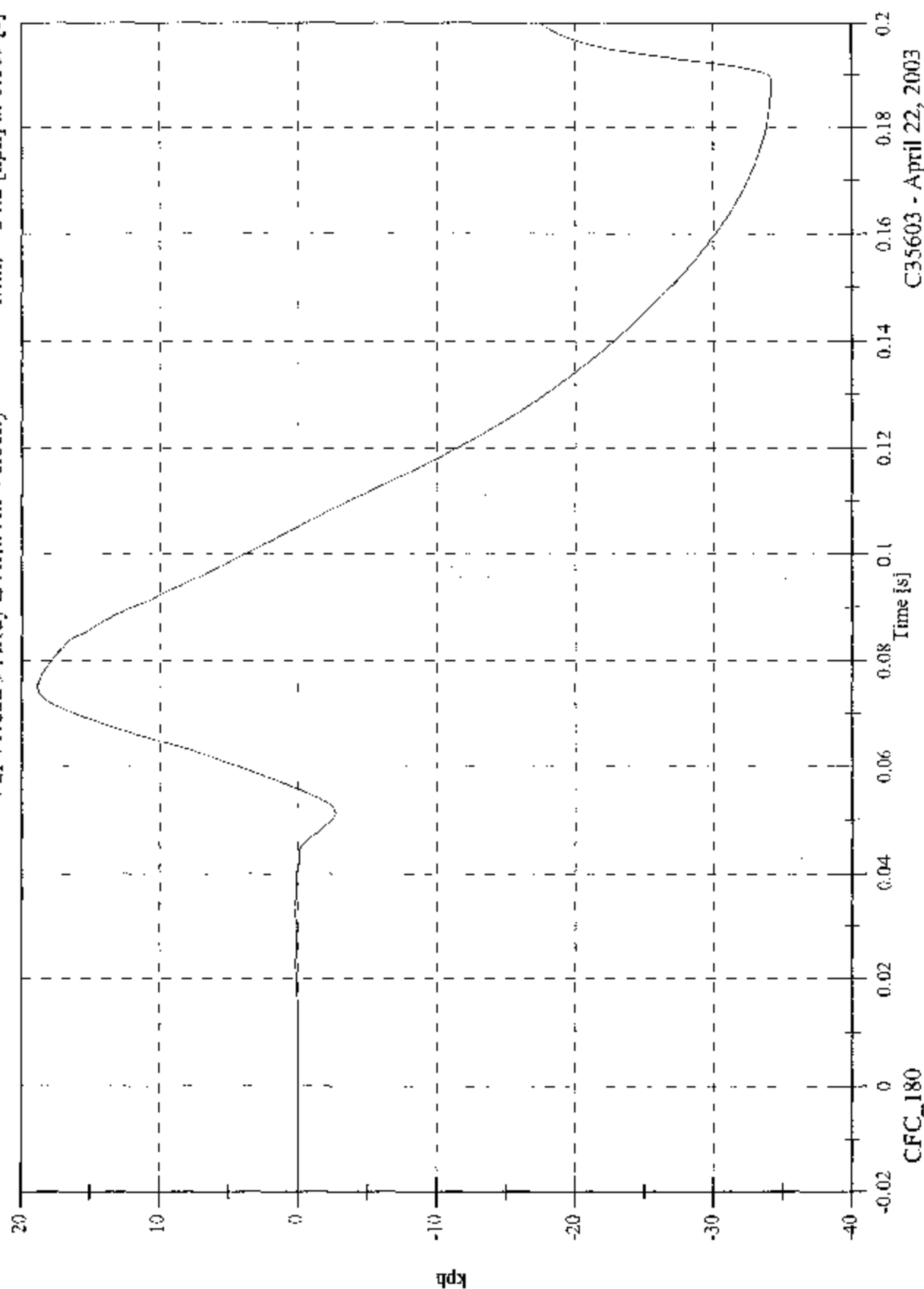


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Head 9 Array Z Arm Ax Velocity

Max: 18.8 [kph] at 0.075 [s]
Min: -34.2 [kph] at 0.189 [s]



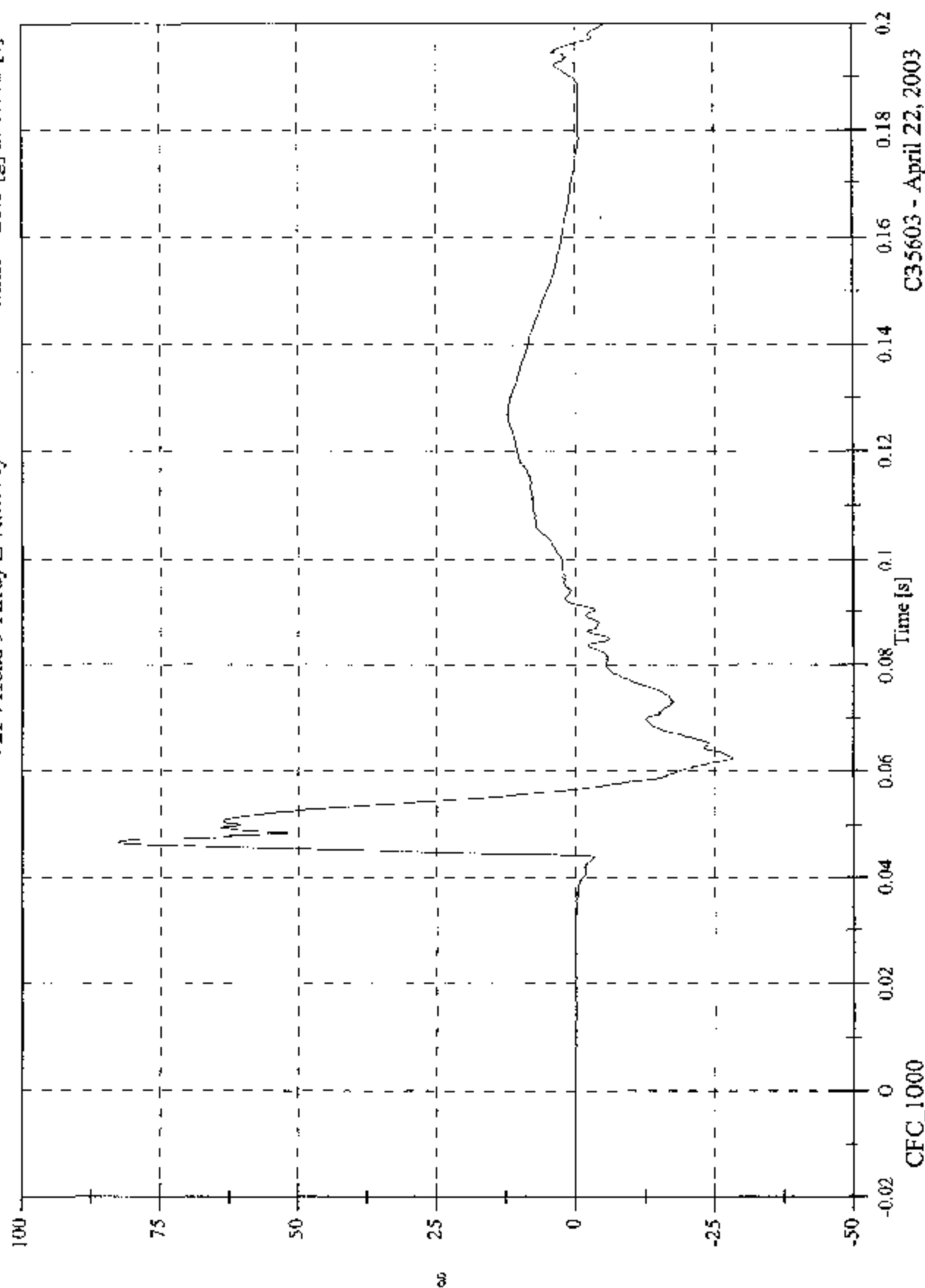
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Head 9 Array Z Arm Ay

Max: 82.8 [g] at 0.047 [s]

Min: -28.3 [g] at 0.062 [s]

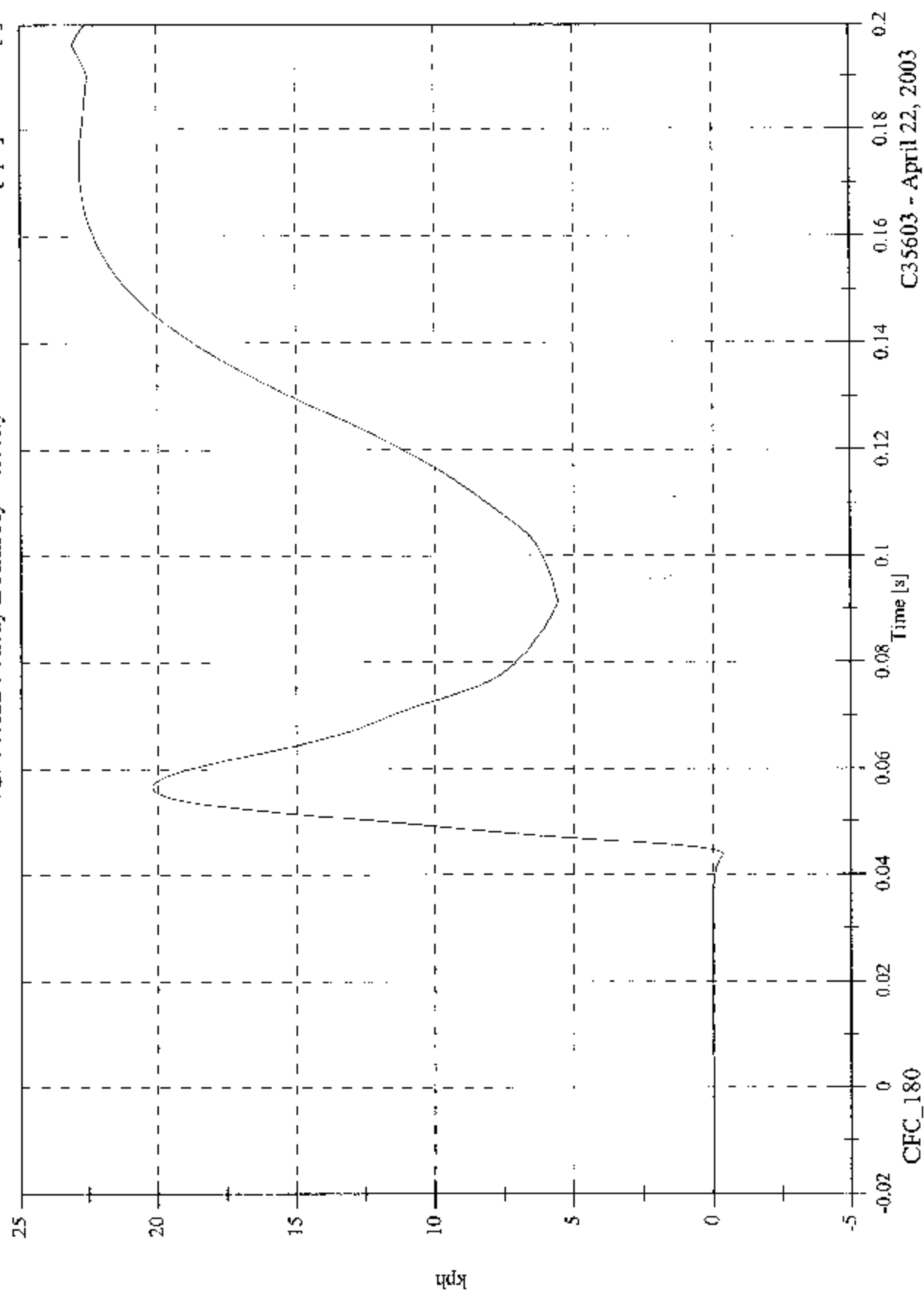


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Head 9 Array Z Arm Ay Velocity

Max: 23.0 [kph] at 0.196 [s]
Min: -0.3 [kph] at 0.044 [s]



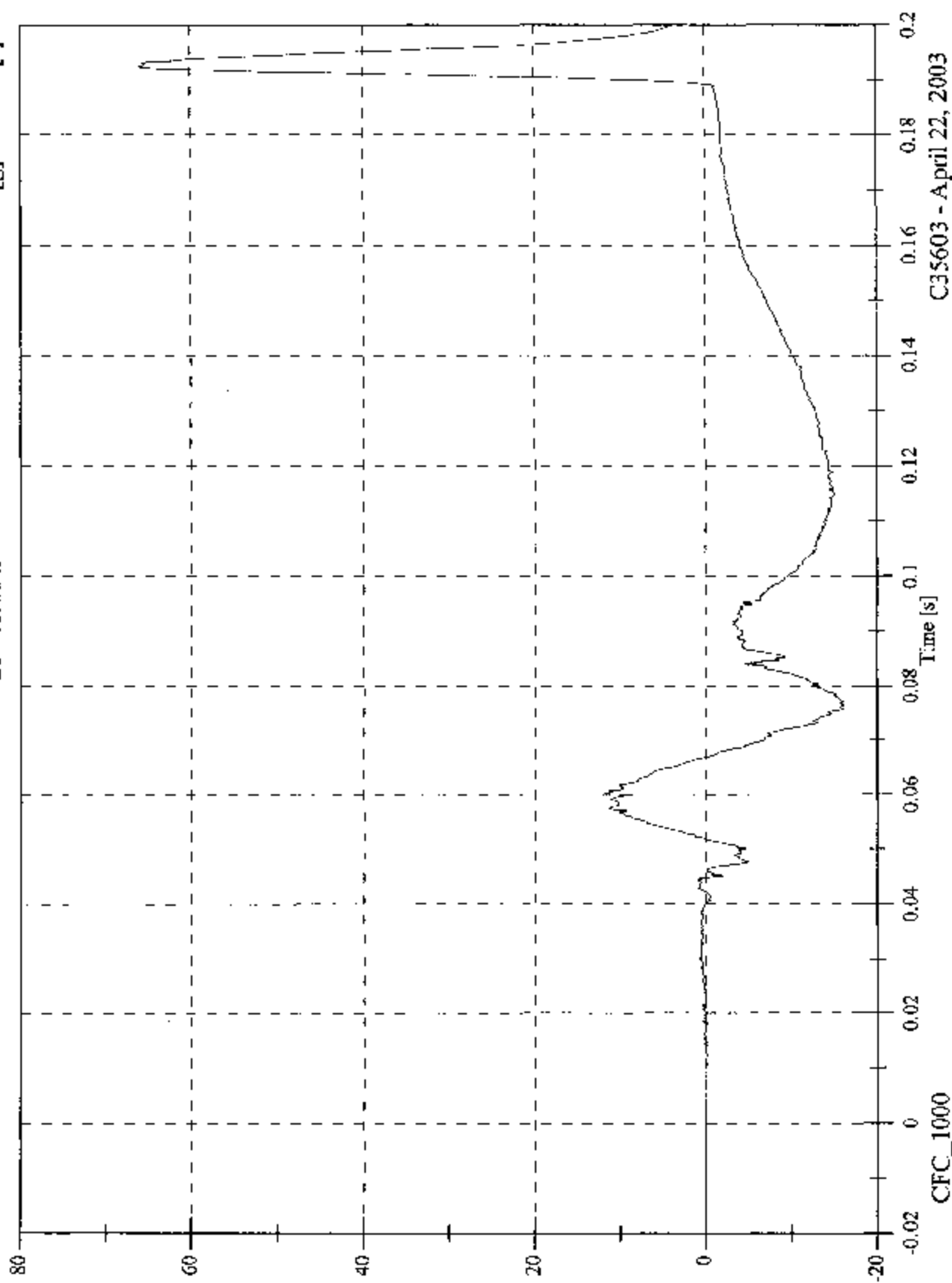
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 66.1 [g] at 0.193 [s]
Min: -16.0 [g] at 0.076 [s]

V2P4 Head x

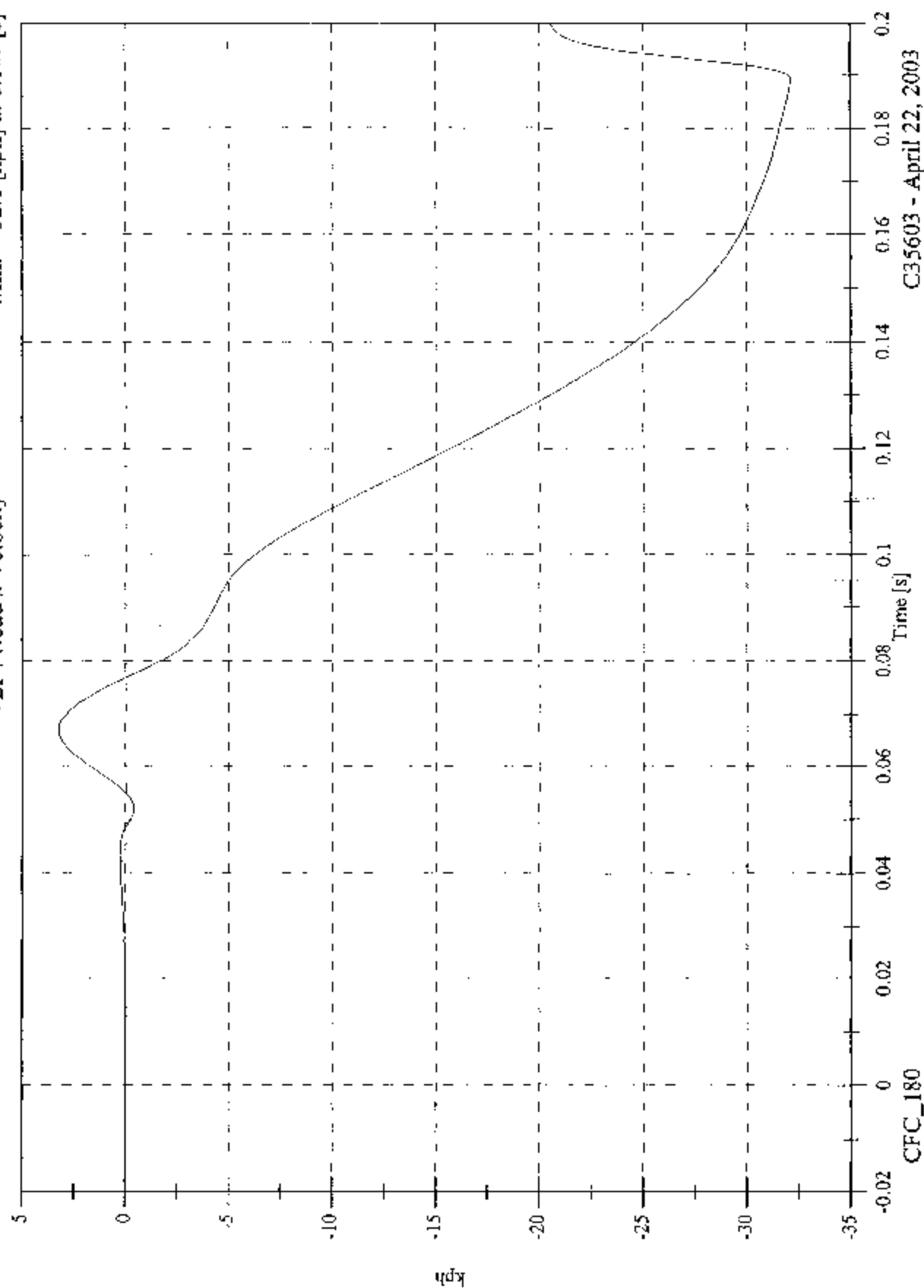


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 3.3 [kph] at 0.067 [s]
 Min: -32.1 [kph] at 0.189 [s]

V2P4 Head x Velocity



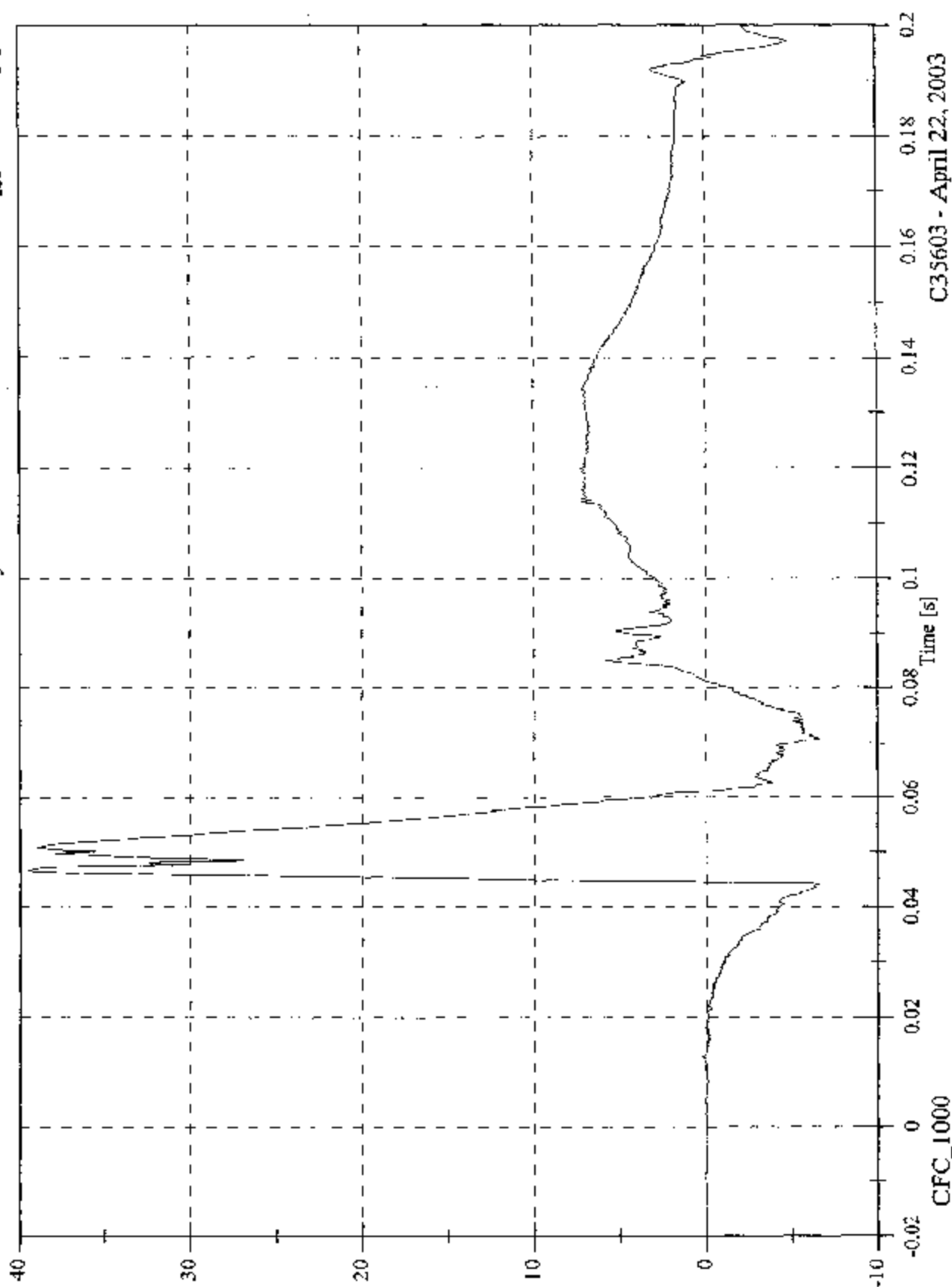
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Head y

Max: 39.5 [g] at 0.047 [s]
Min: -6.7 [g] at 0.071 [s]

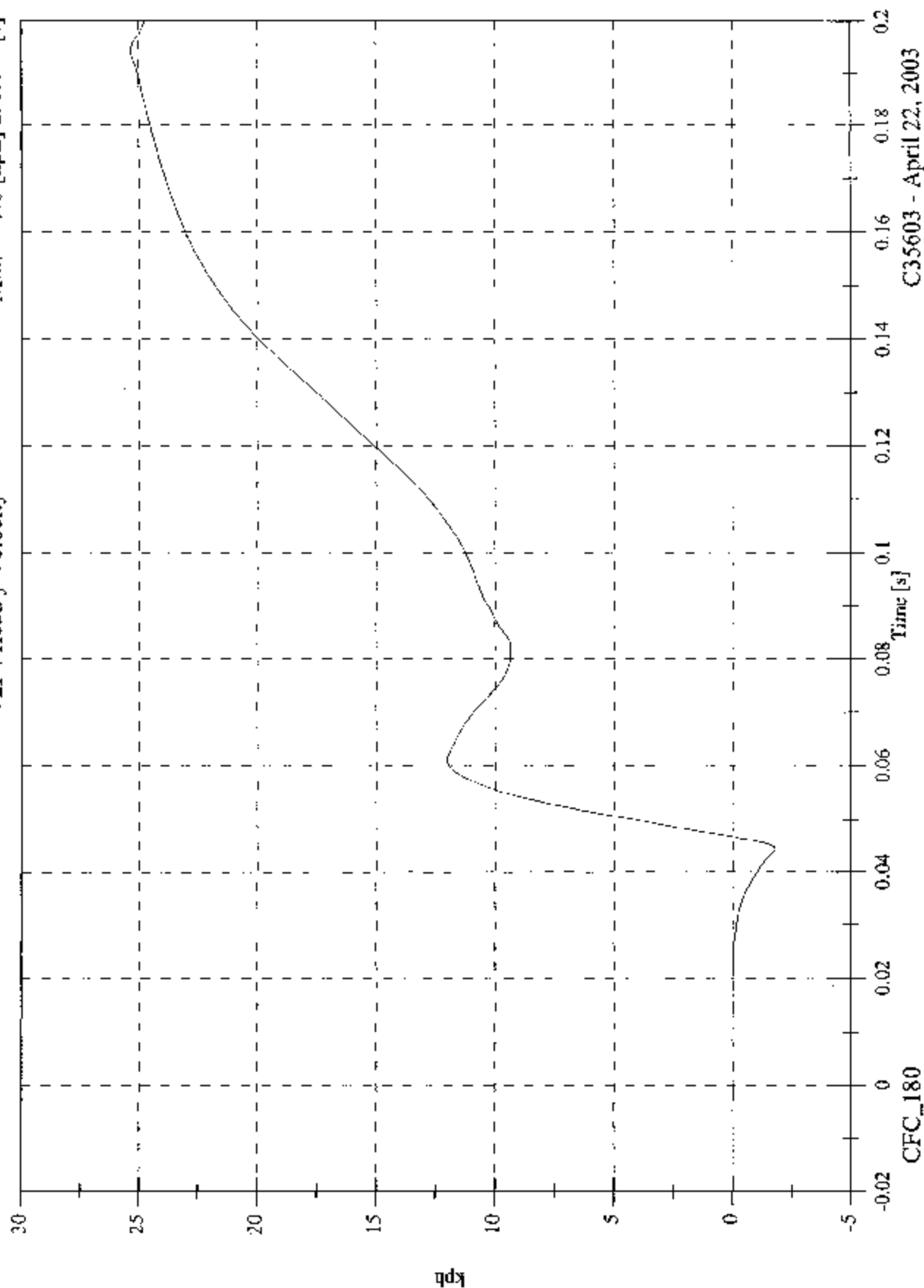


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Head y Velocity

Max: 25.3 [kph] at 0.194 [s]
Min: -1.8 [kph] at 0.044 [s]

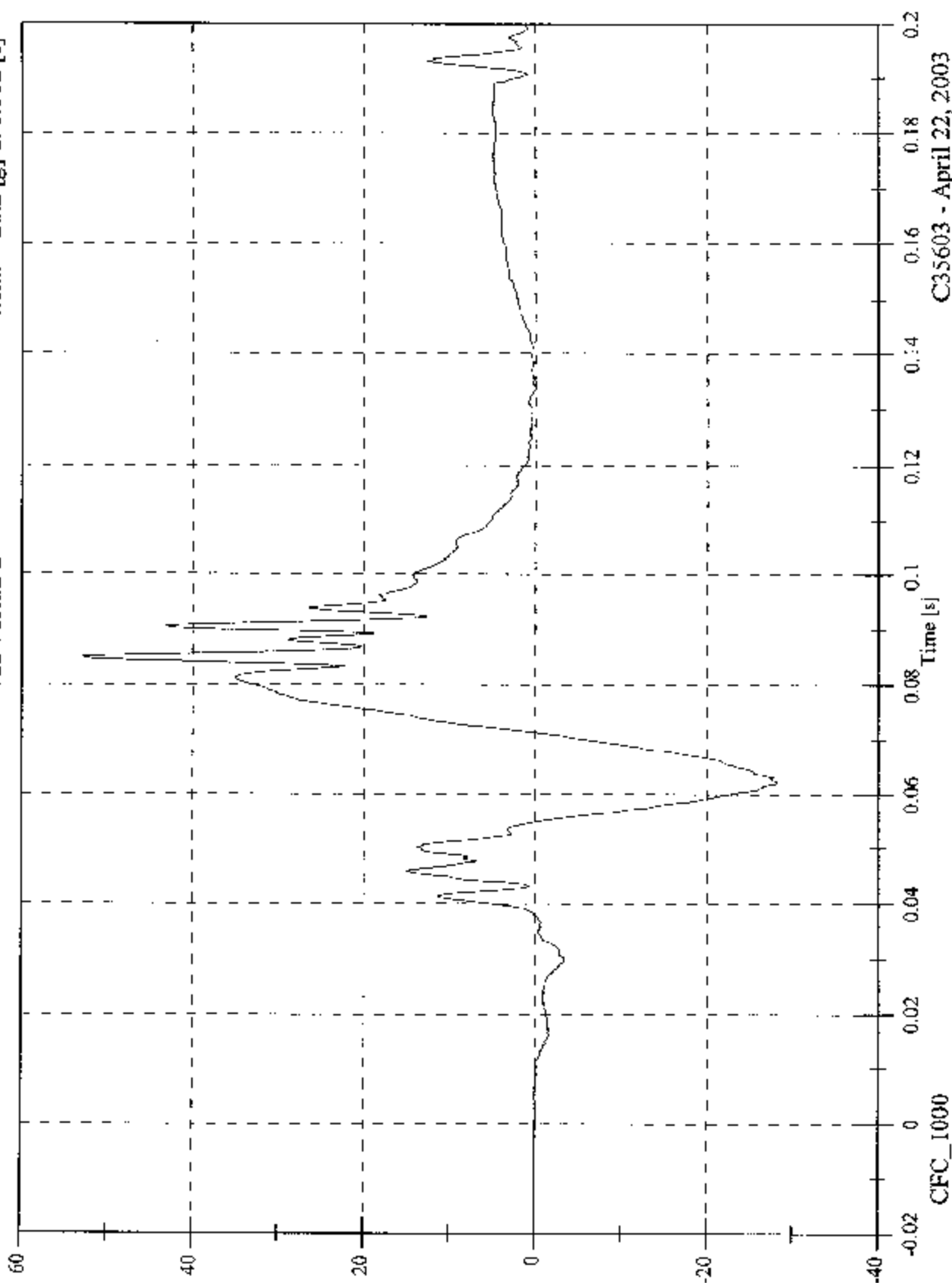


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 52.8 [g] at 0.085 [s]
Min: -28.2 [g] at 0.062 [s]

V2P4 Head z

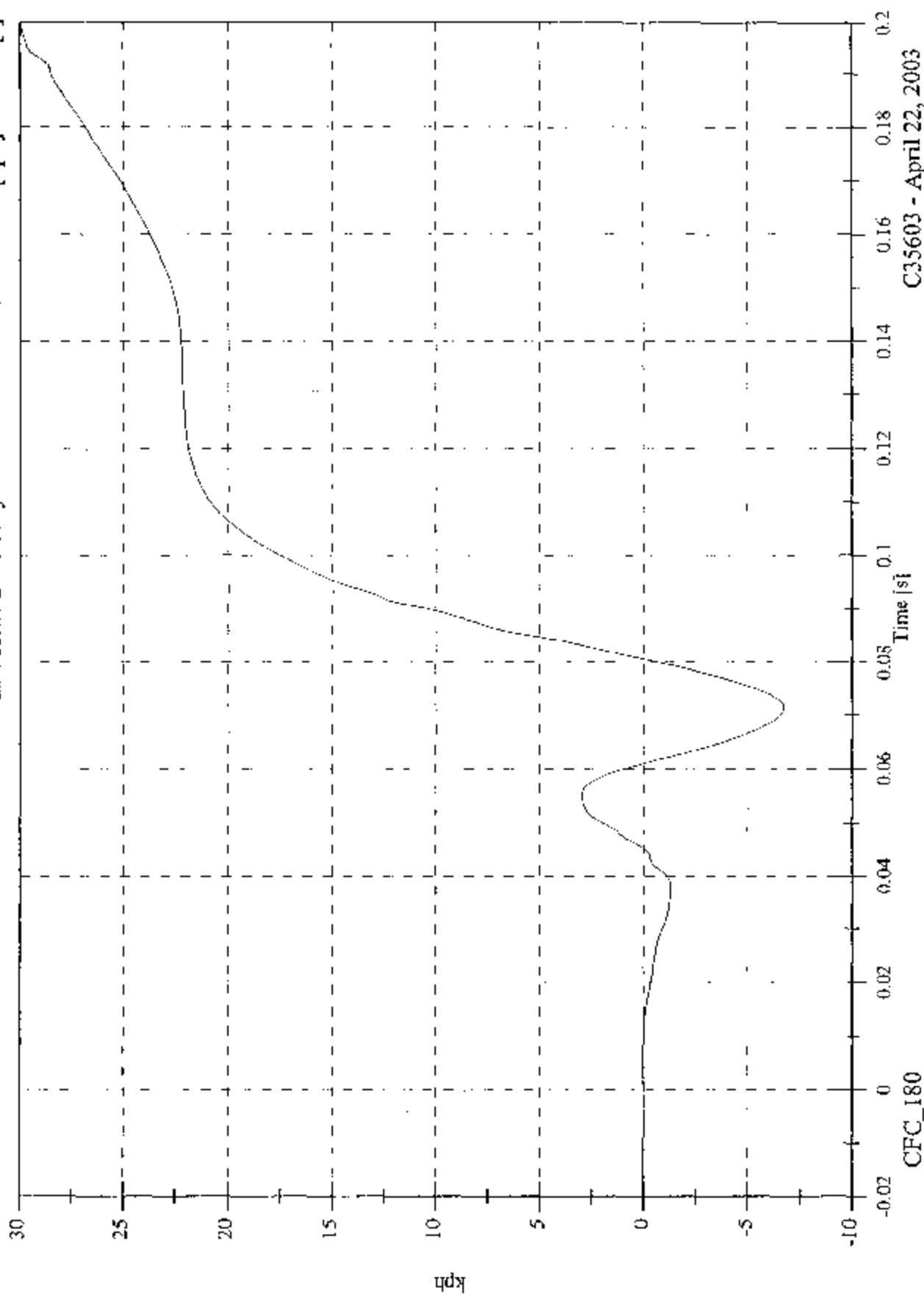


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Head z Velocity

Max: 30.0 [kph] at 0.200 [s]
Min: -6.7 [kph] at 0.071 [s]

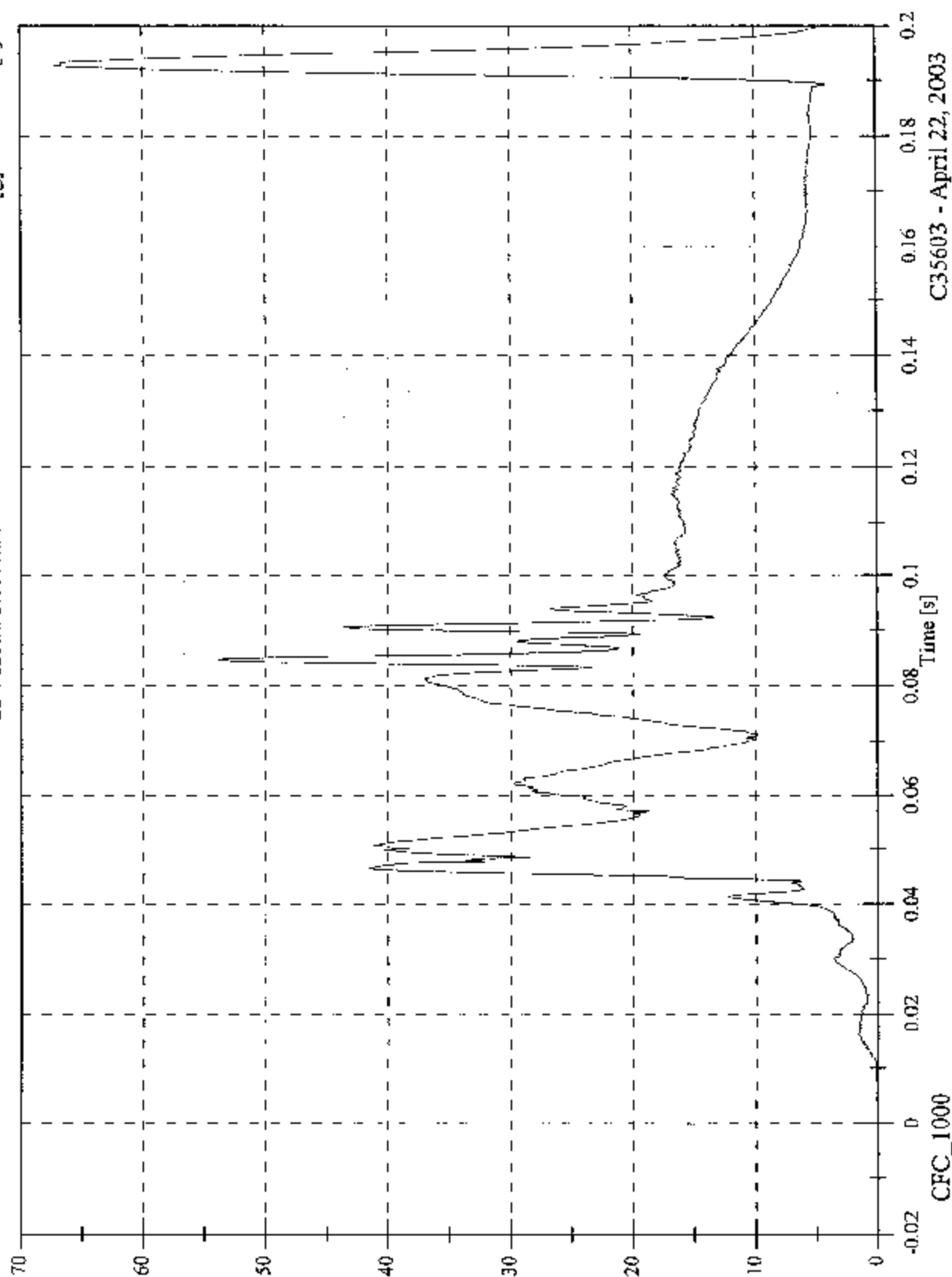


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 67.1 [g] at 0.193 [s]
Min: 0.0 [g] at -0.006 [s]

V2P4 Head Resultant

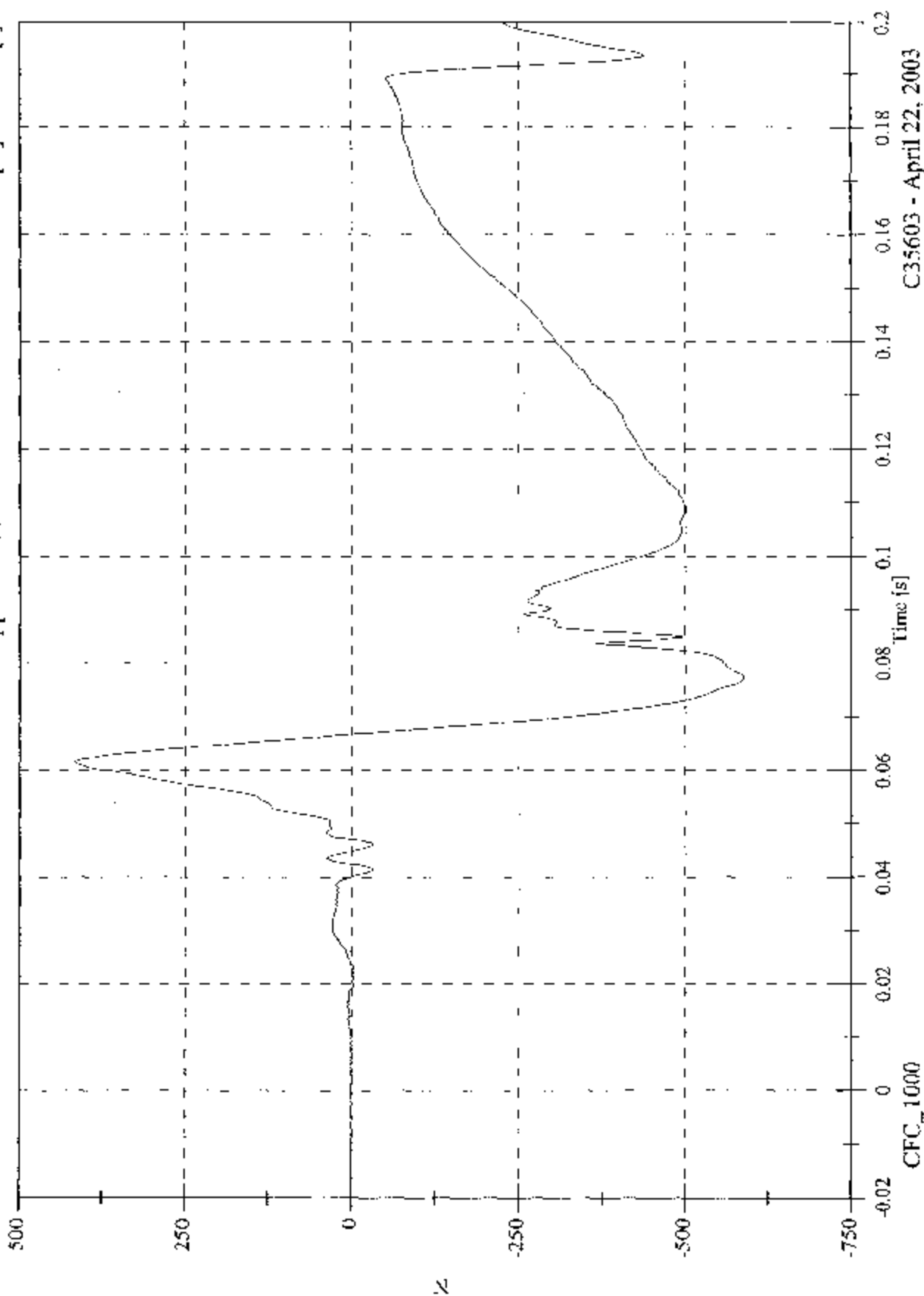


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 416.1 [N] at 0.062 [s]
Min: -587.9 [N] at 0.077 [s]

V2P4 Upper Neck Fx

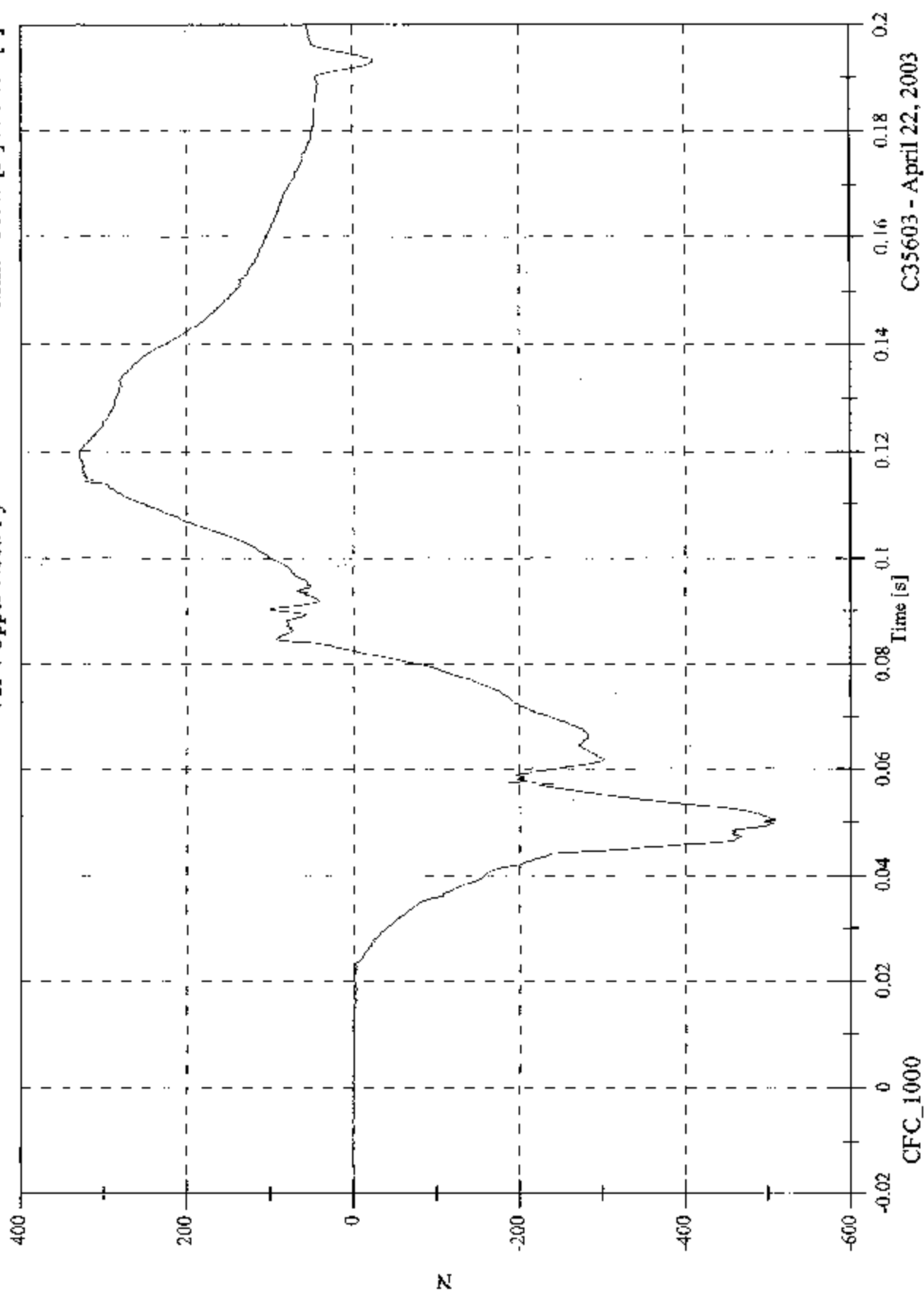


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Upper Neck Fy

Max: 329.9 [N] at 0.119 [s]
Min: -509.7 [N] at 0.050 [s]



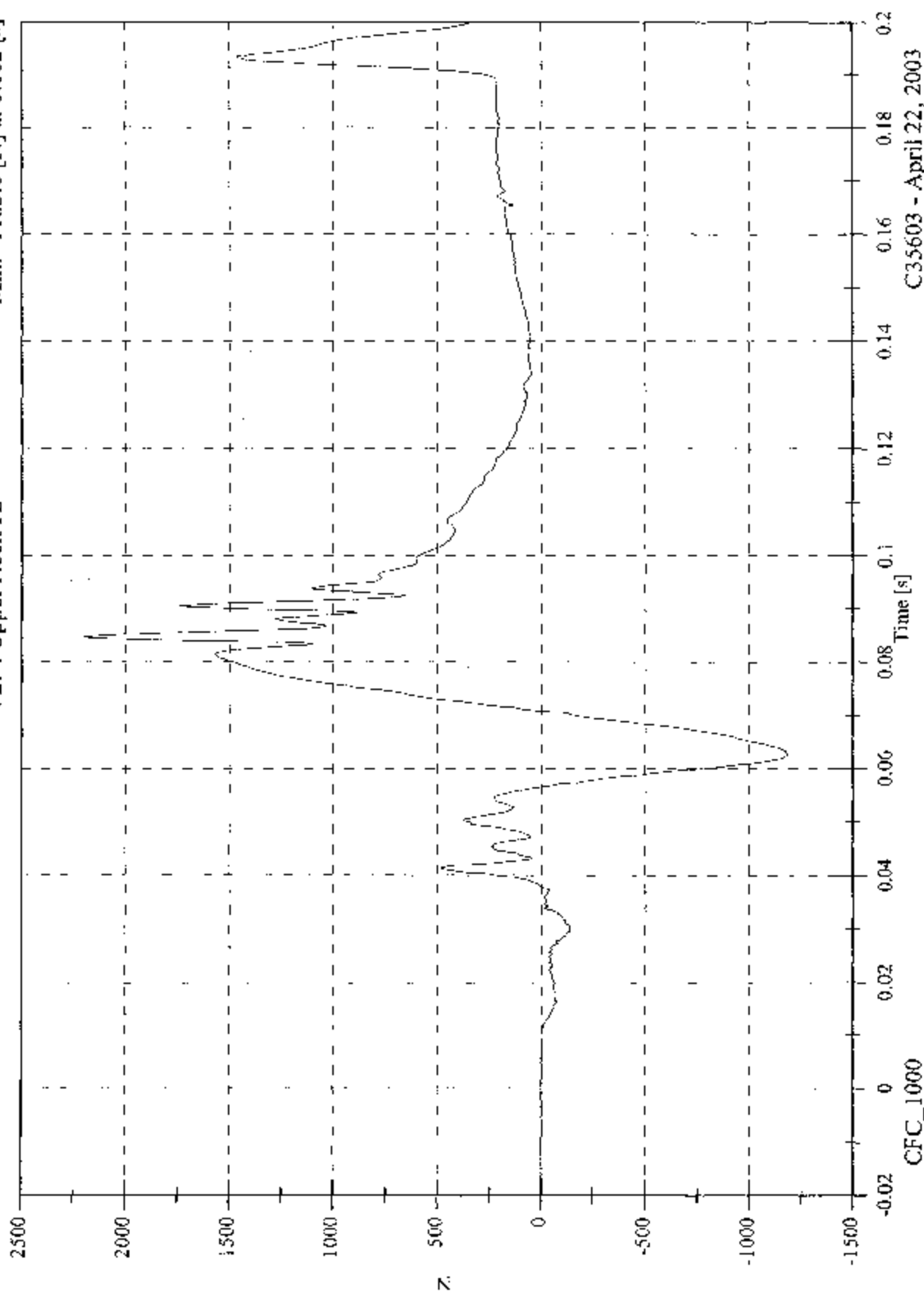
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Upper Neck Fz

Max: 2199.6 [N] at 0.085 [s]

Min: -1185.6 [N] at 0.062 [s]



CFC_1000

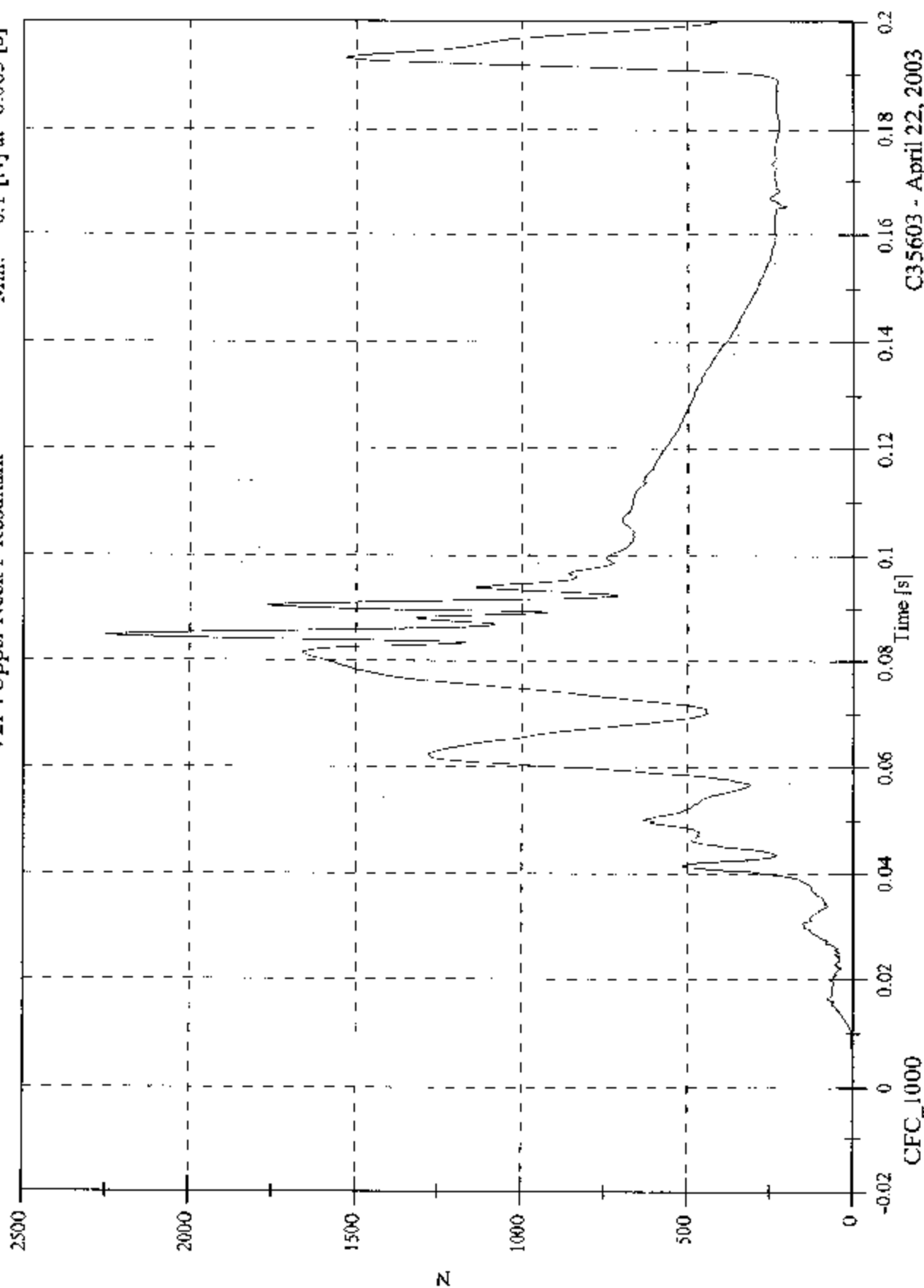
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Upper Neck F Resultant

Max: 2255.7 [N] at 0.085 [s]

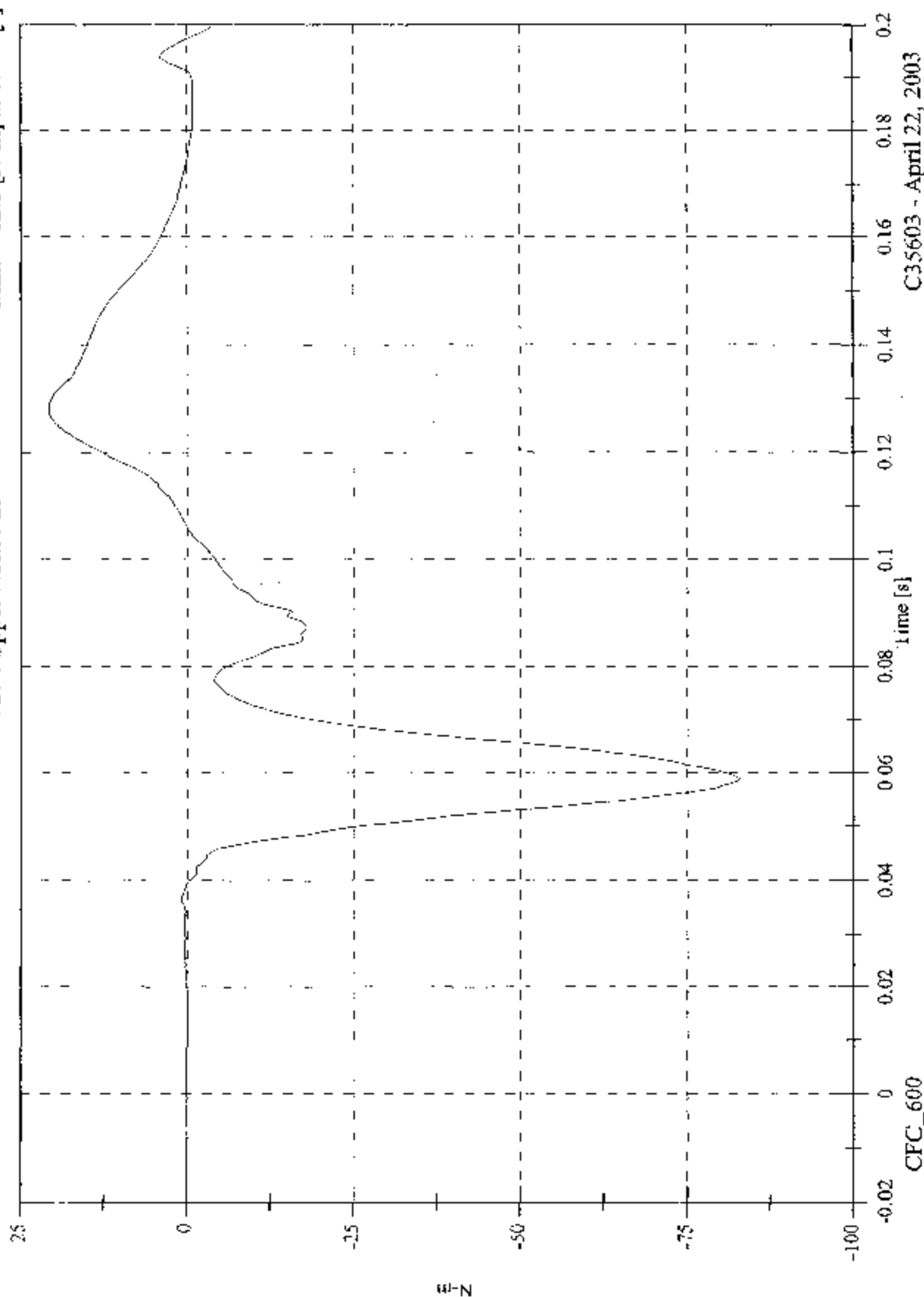
Min: 0.1 [N] at -0.003 [s]



FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Upper Neck Mx

Max: 20.8 [N-m] at 0.128 [s]
Min: -82.8 [N-m] at 0.059 [s]



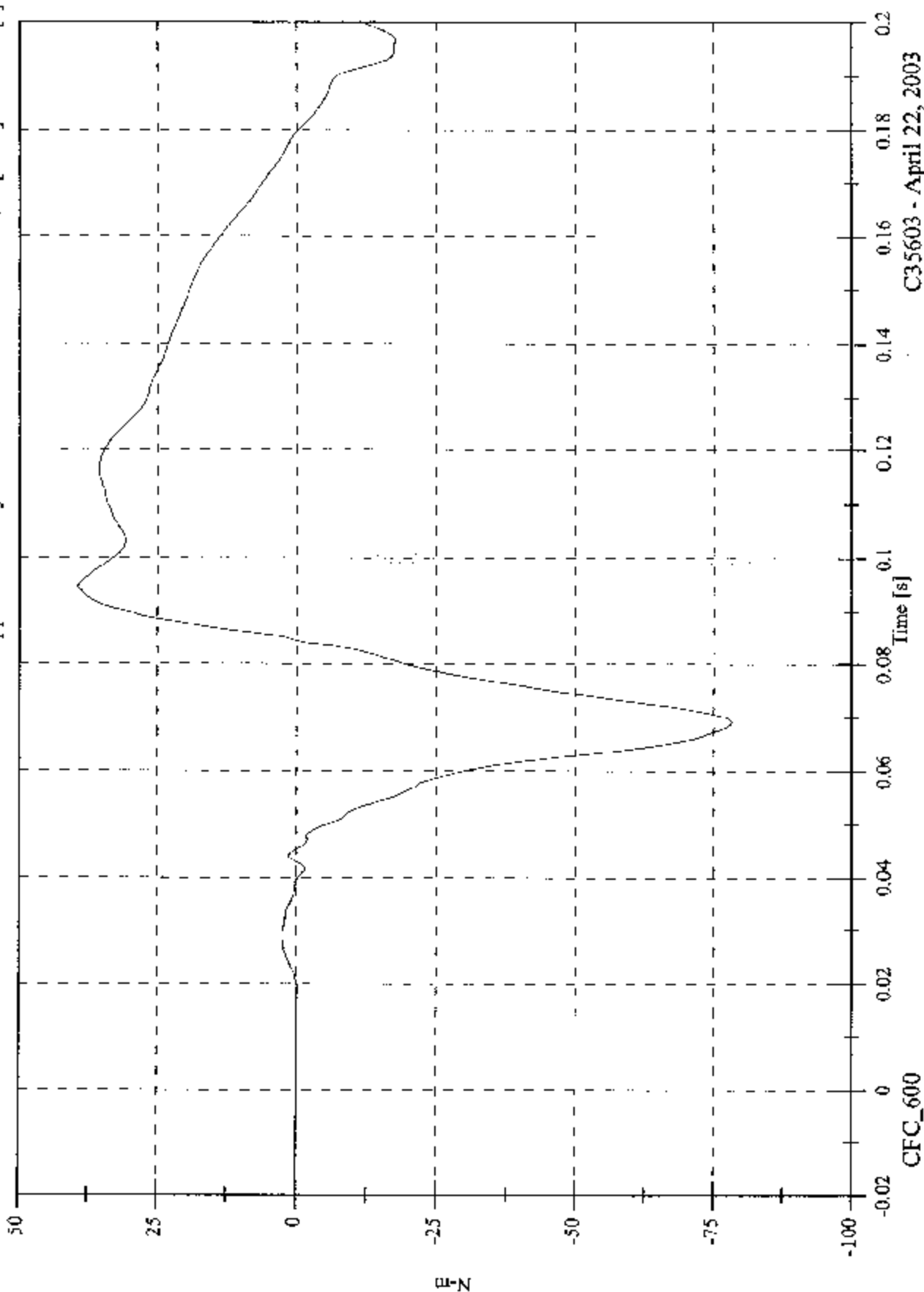
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Upper Neck My

Max: 39.4 [N-m] at 0.094 [s]

Min: -78.3 [N-m] at 0.069 [s]

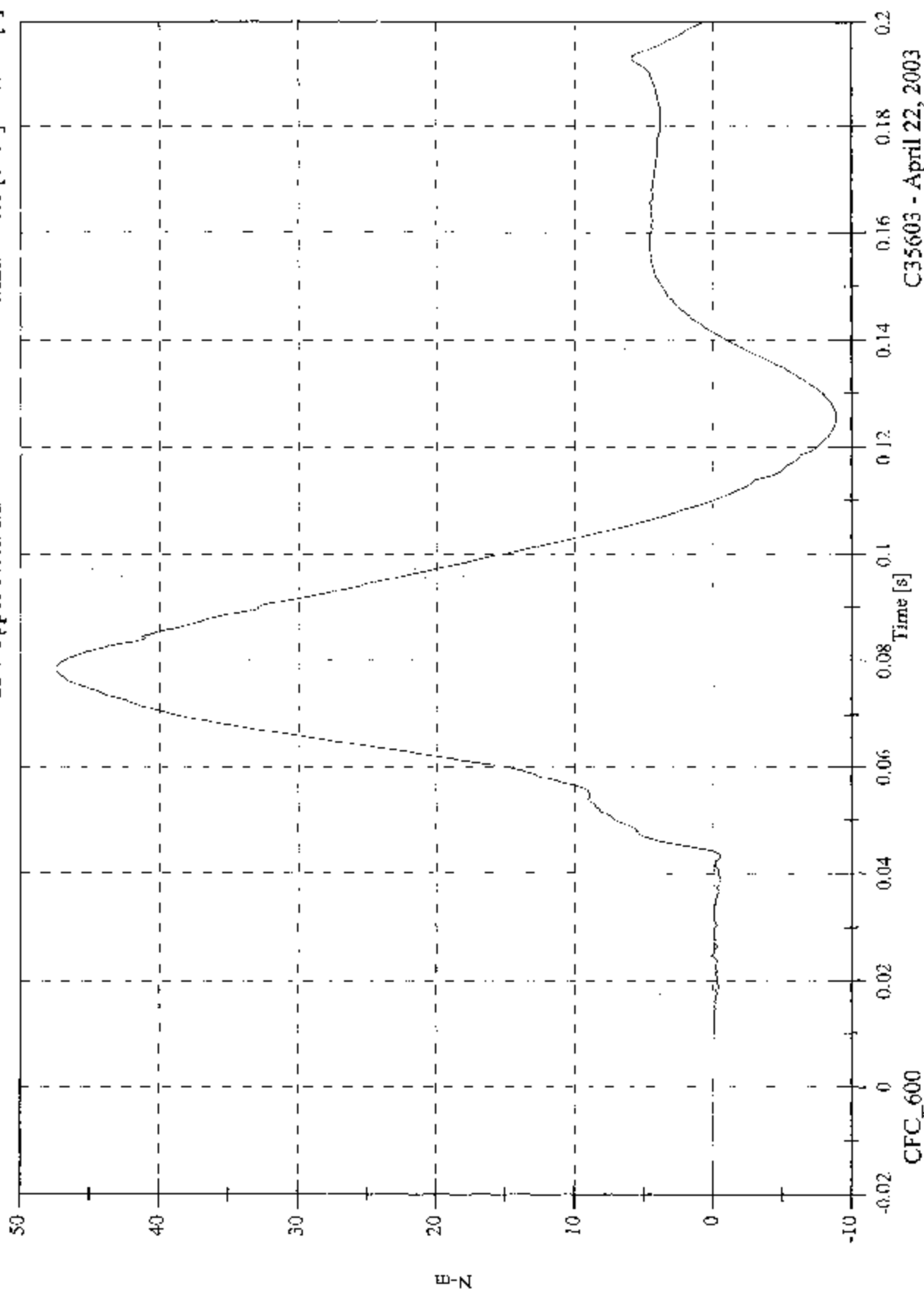


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Upper Neck Mz

Max: 47.5 [N-m] at 0.078 [s]
Min: -8.8 [N-m] at 0.126 [s]

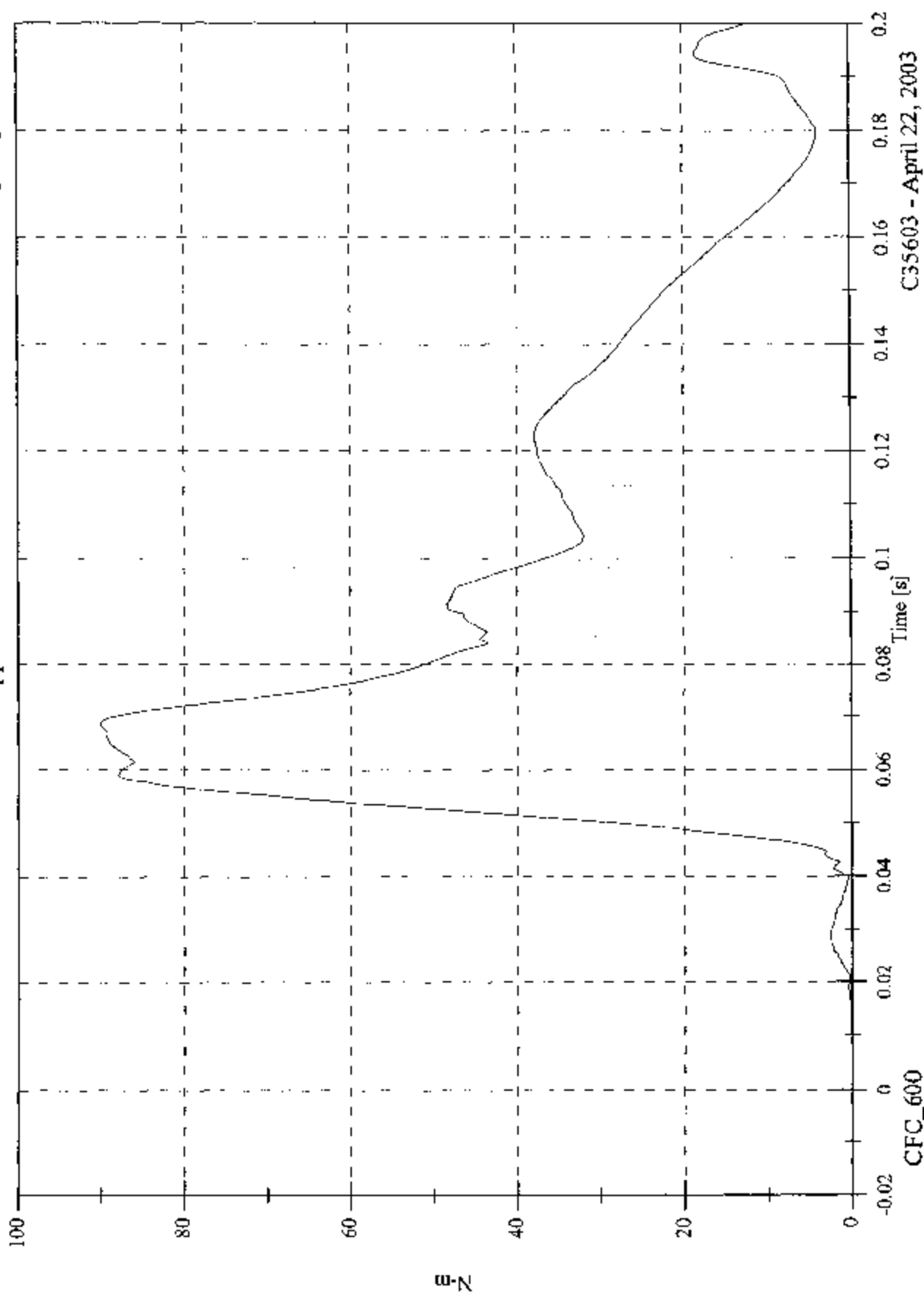


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Upper Neck M Resultant

Max: 90.0 [N-m] at 0.069 [s]
Min: 0.0 [N-m] at -0.014 [s]

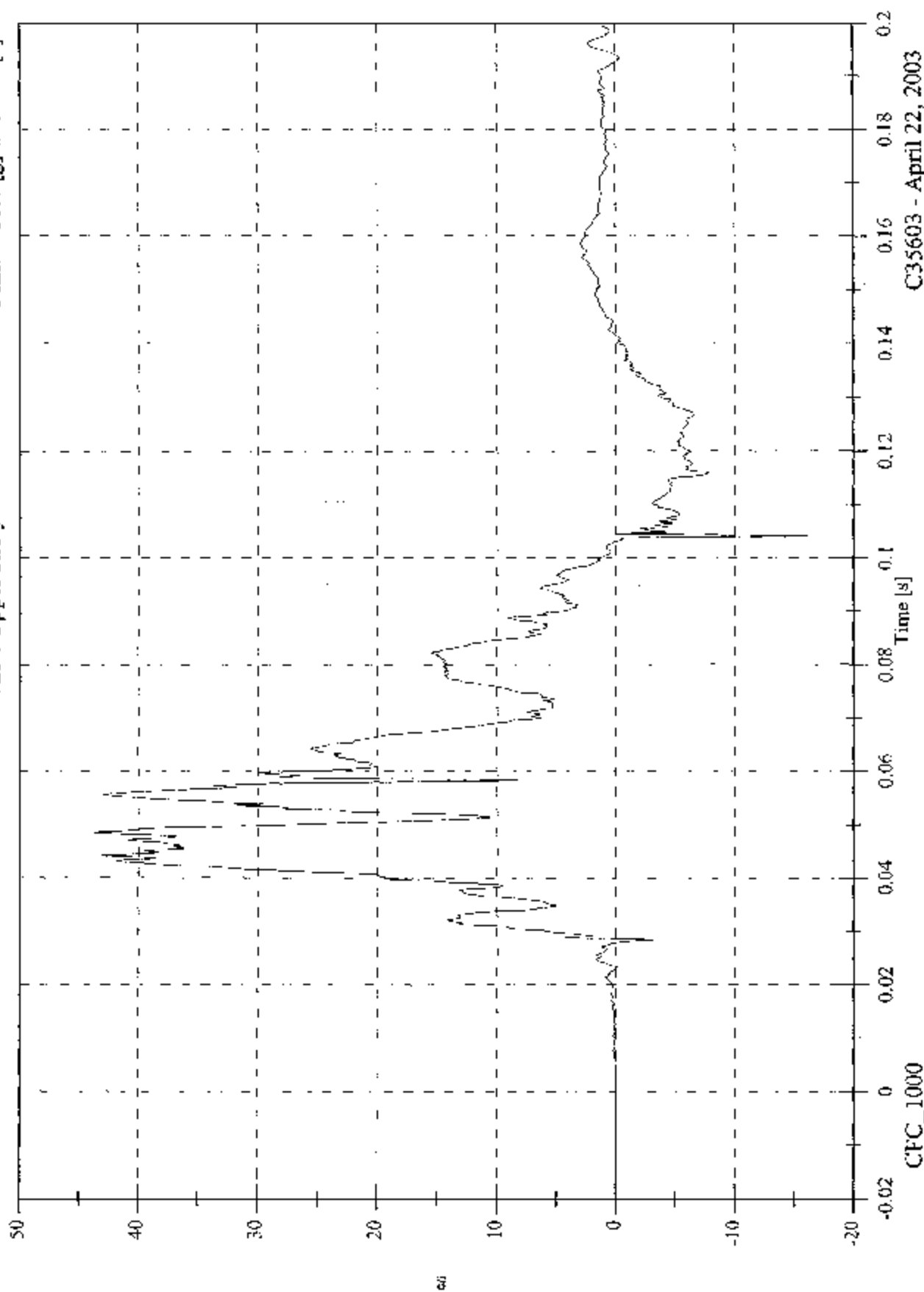


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Upper Rib y

Max: 43.7 [g] at 0.048 [s]
Min: -16.0 [g] at 0.104 [s]

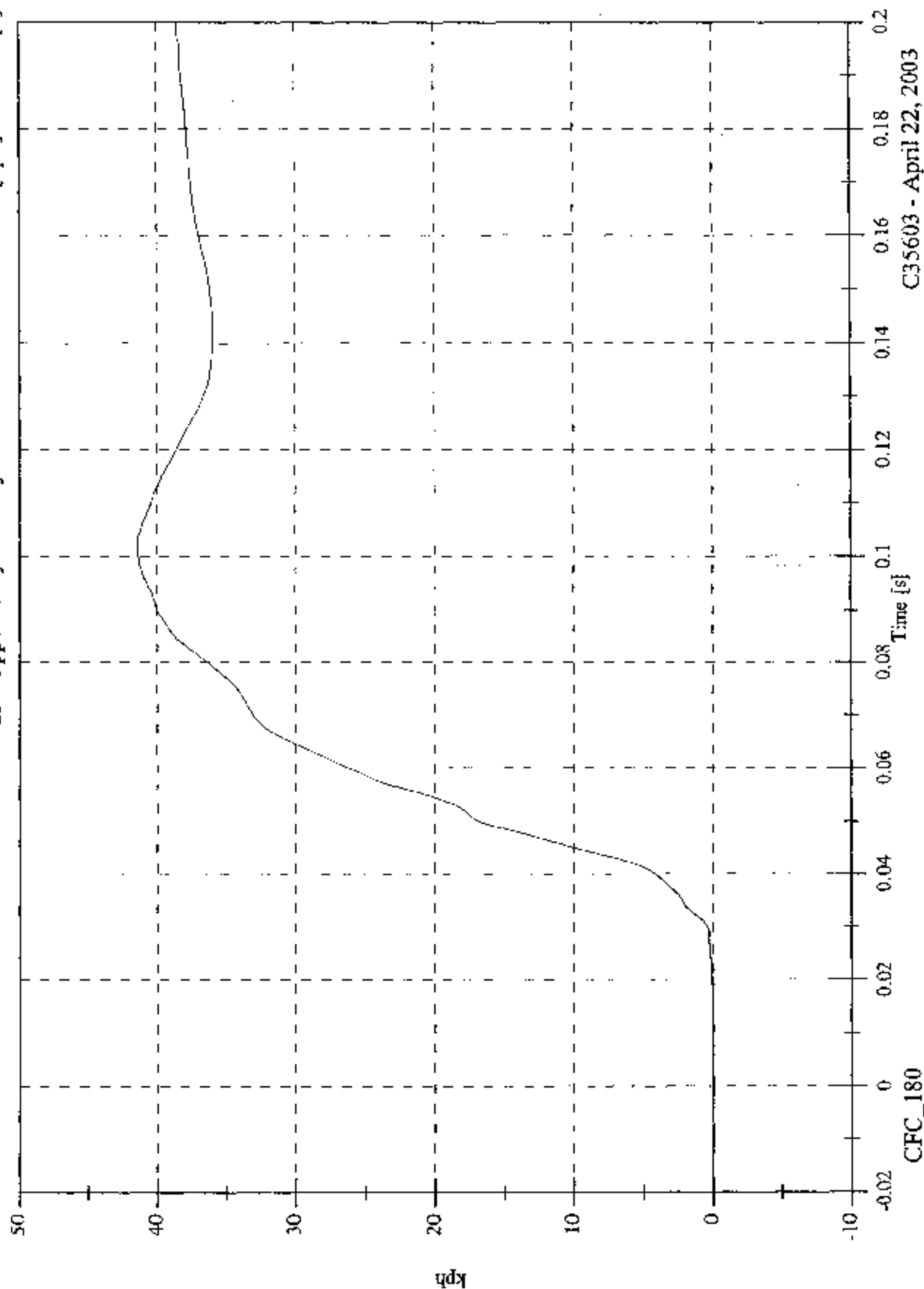


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Upper Rib y Velocity

Max: 41.5 [kph] at 0.103 [s]
Min: -0.0 [kph] at -0.016 [s]



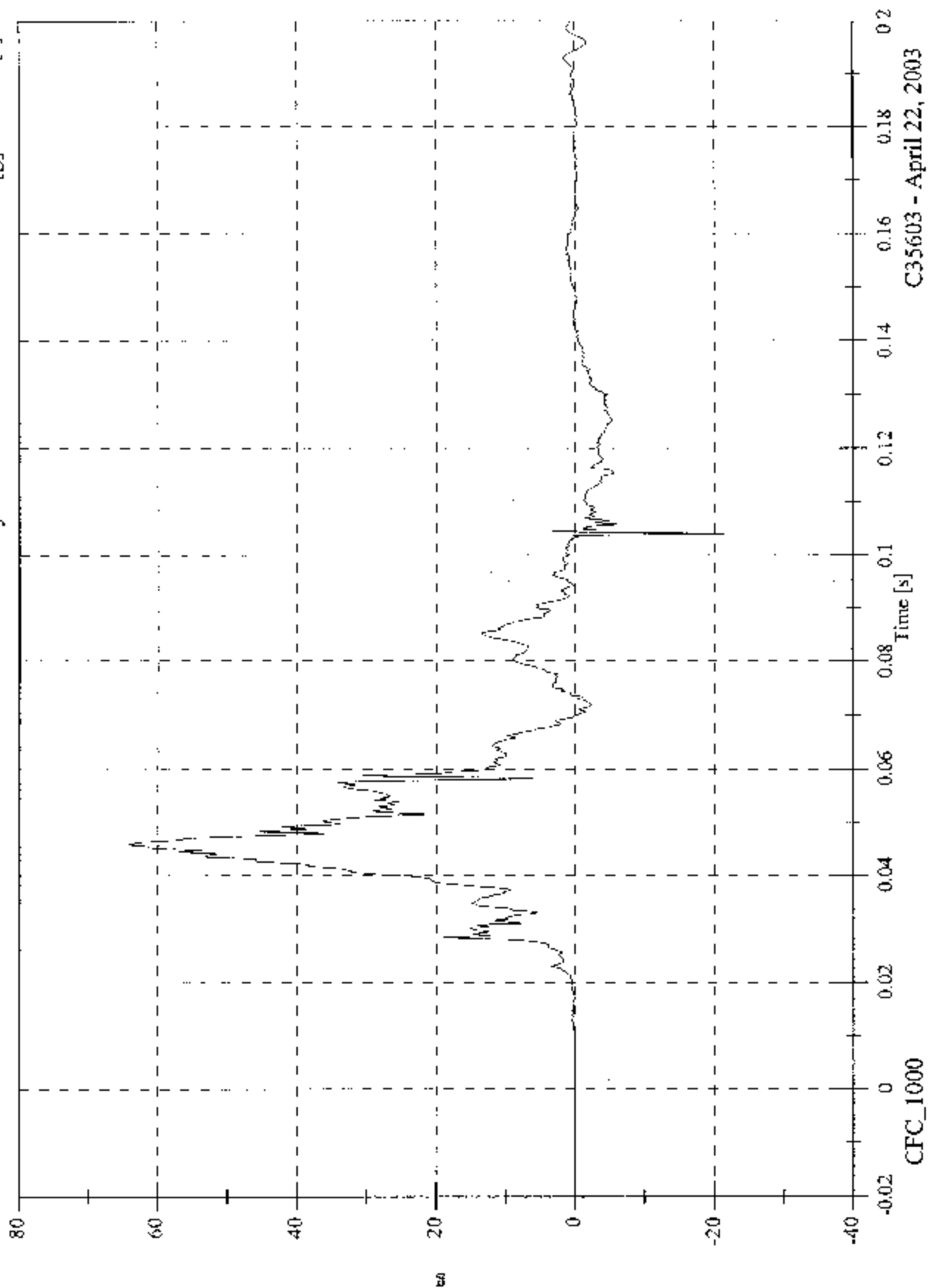
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Lower Rib y

Max: 64.5 [g] at 0.046 [s]
Min: -21.4 [g] at 0.104 [s]

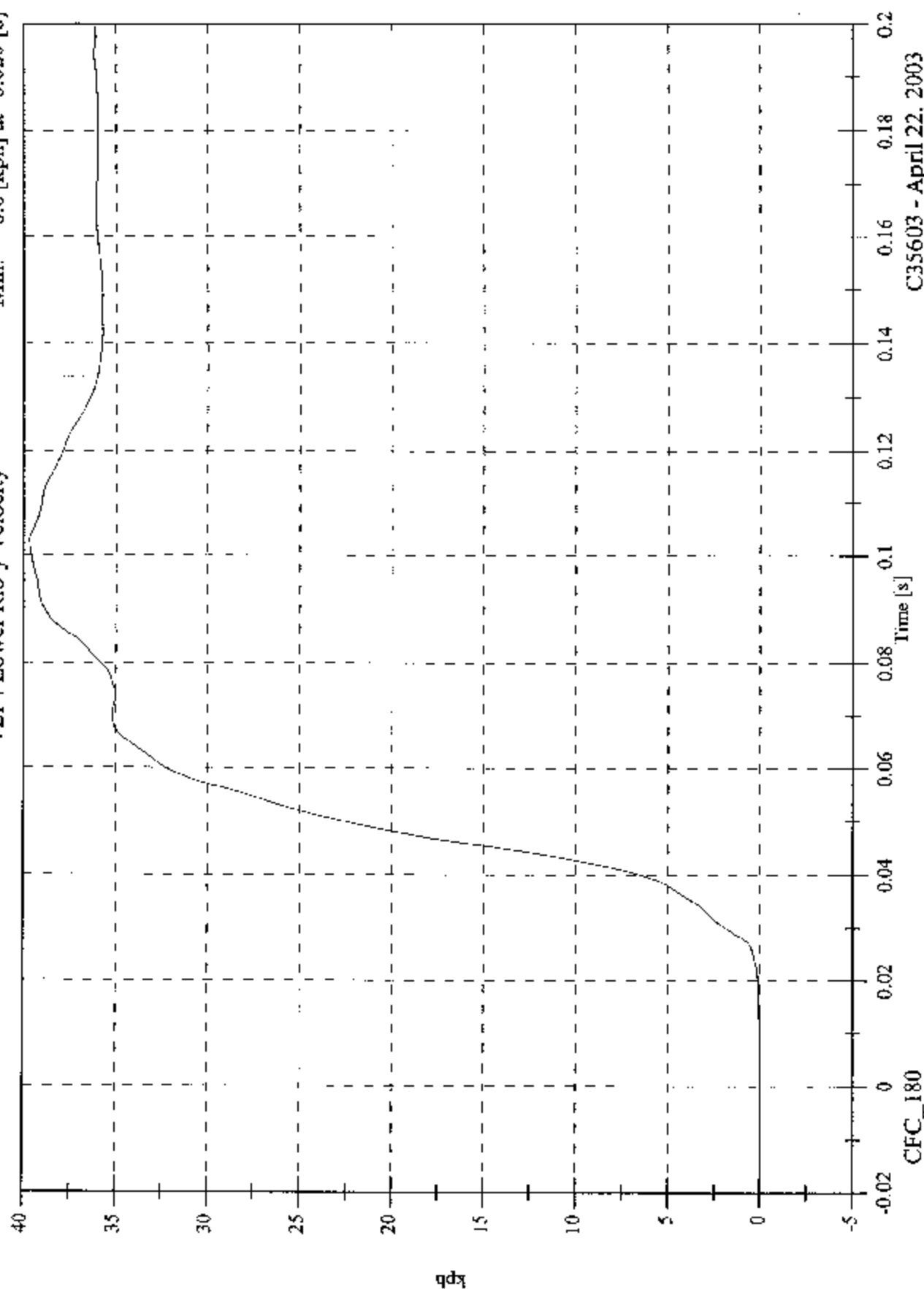


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 39.7 [kph] at 0.103 [s]
 Min: -0.0 [kph] at -0.020 [s]

V2P4 Lower Rib y Velocity



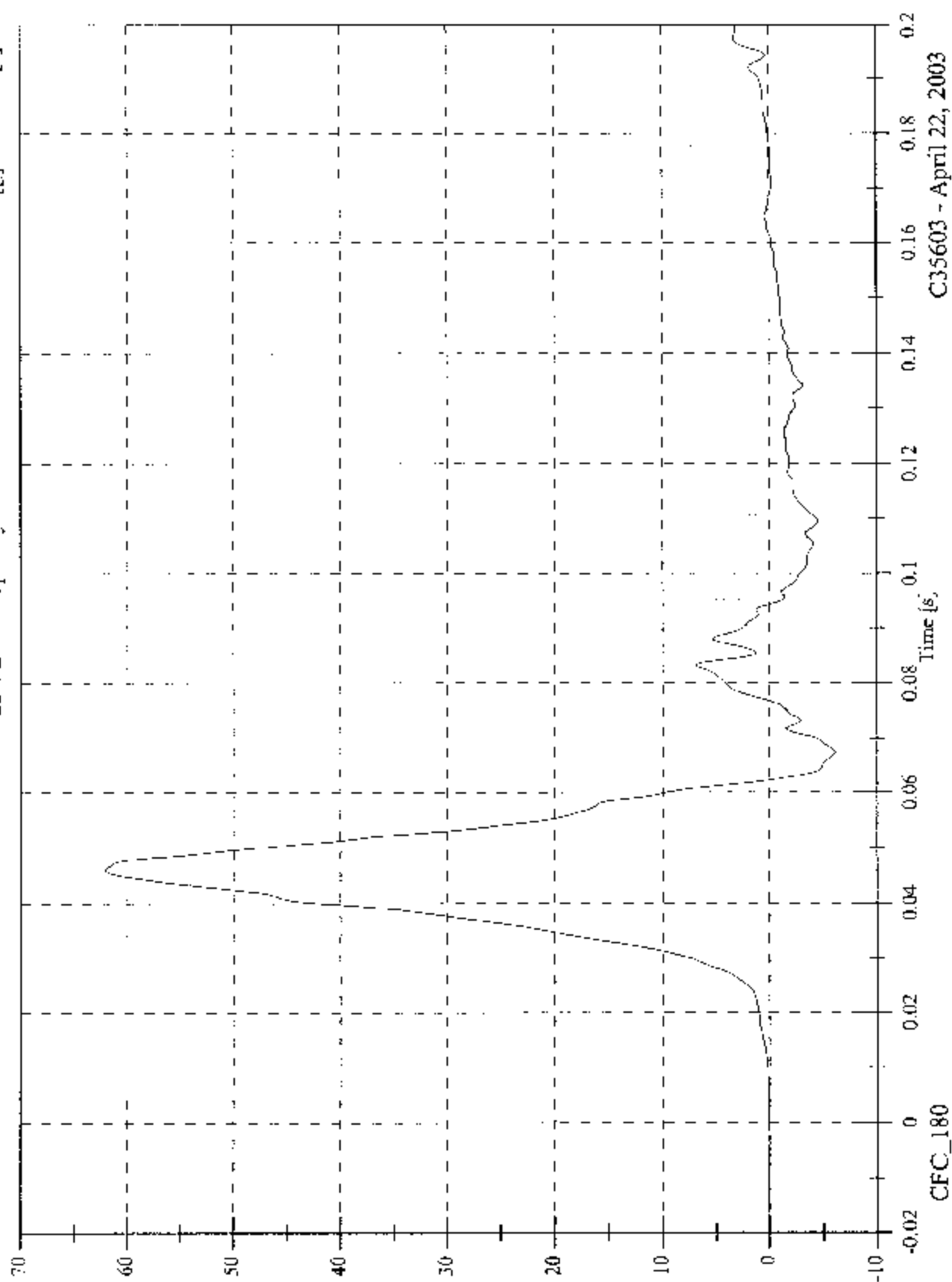
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Lower Spine y

Max: 62.0 [g] at 0.046 [s]
Min: -6.0 [g] at 0.067 [s]



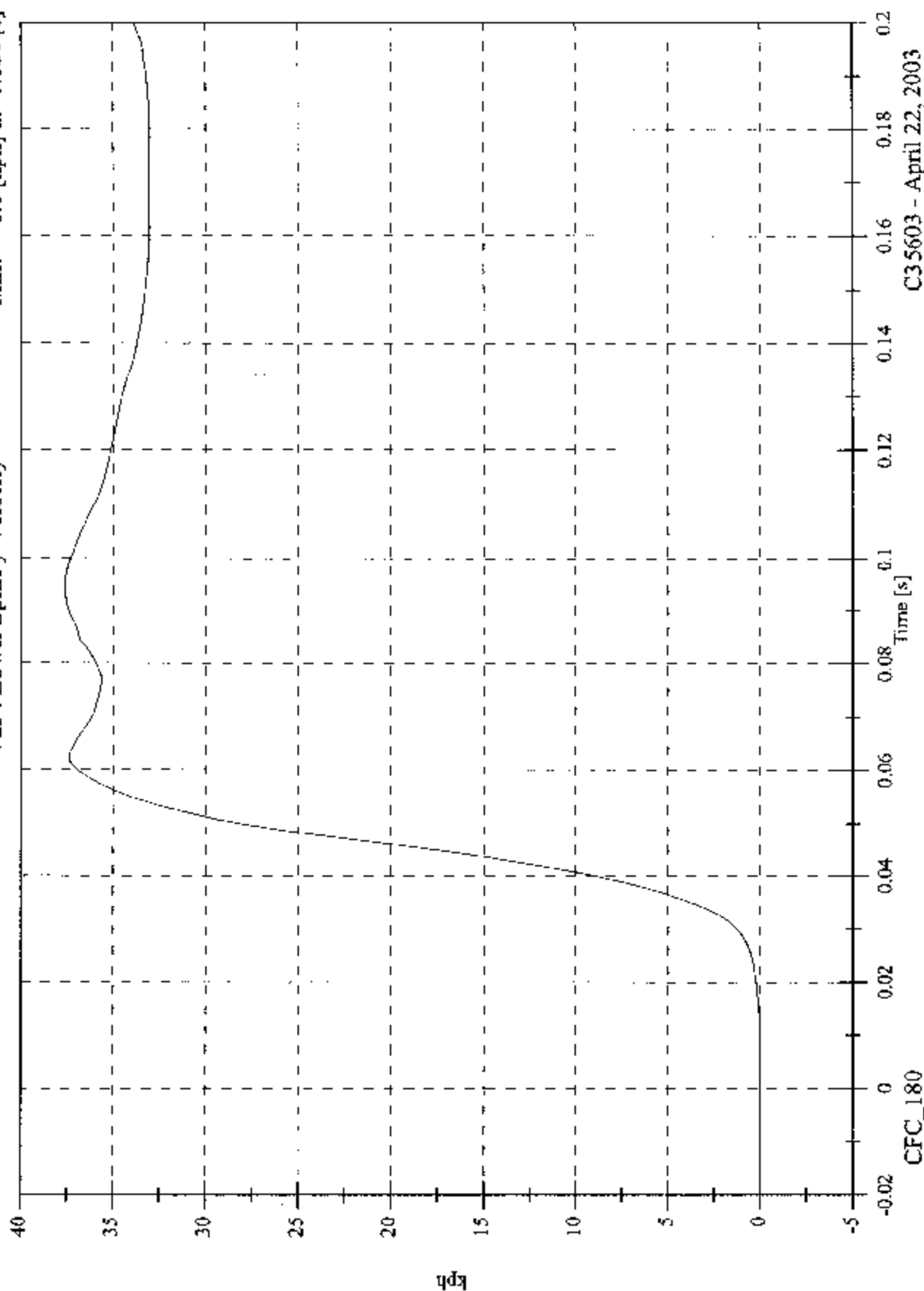
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 37.6 [kph] at 0.094 [s]

Min: -0.0 [kph] at -0.020 [s]

V2P4 Lower Spine y Velocity

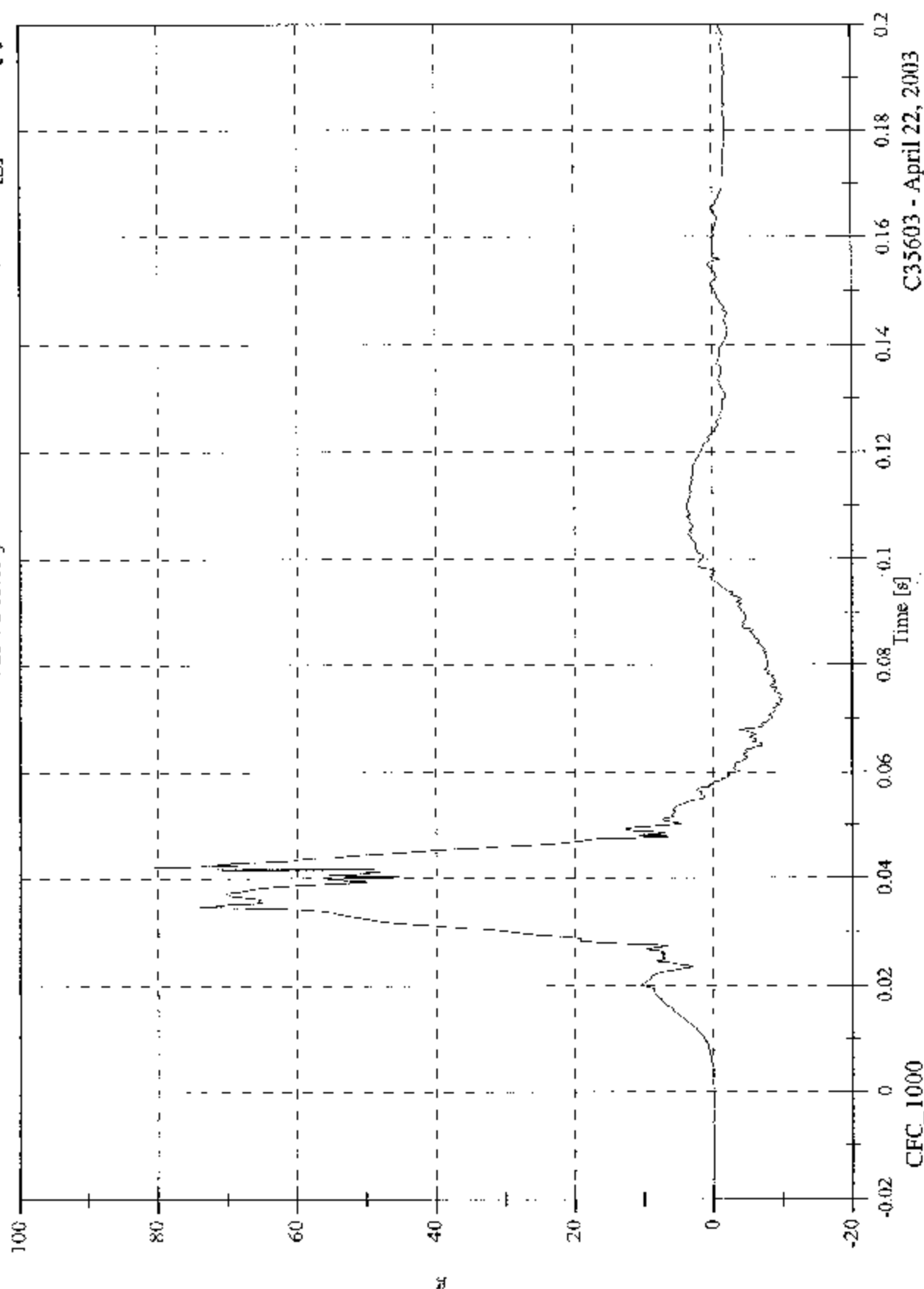


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 80.5 [g] at 0.042 [s]
 Min: -10.0 [g] at 0.074 [s]

V2P4 Pelvic y

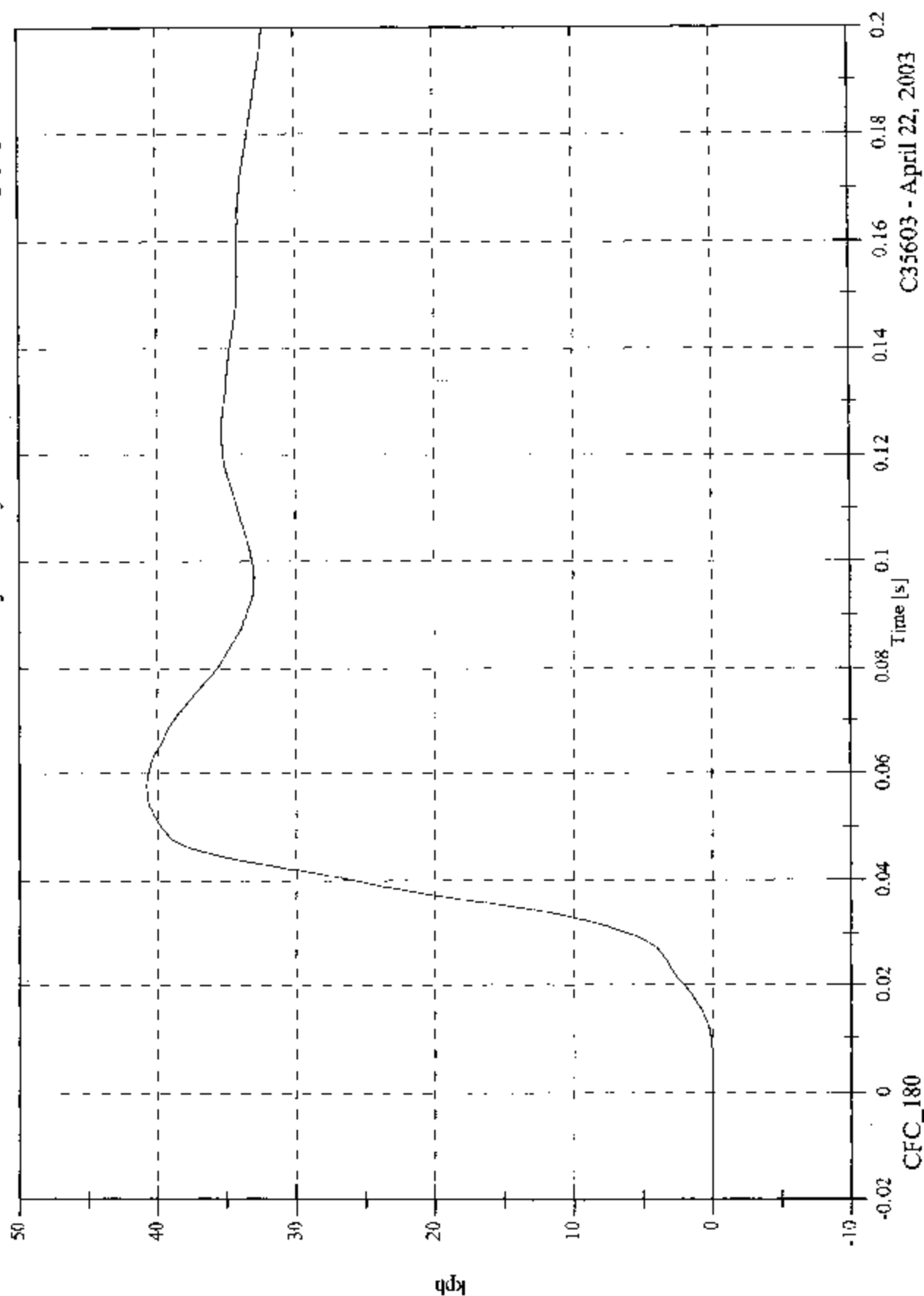


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FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Pelvic y Velocity

Max: 40.8 [kph] at 0.058 [s]
Min: -0.0 [kph] at -0.019 [s]

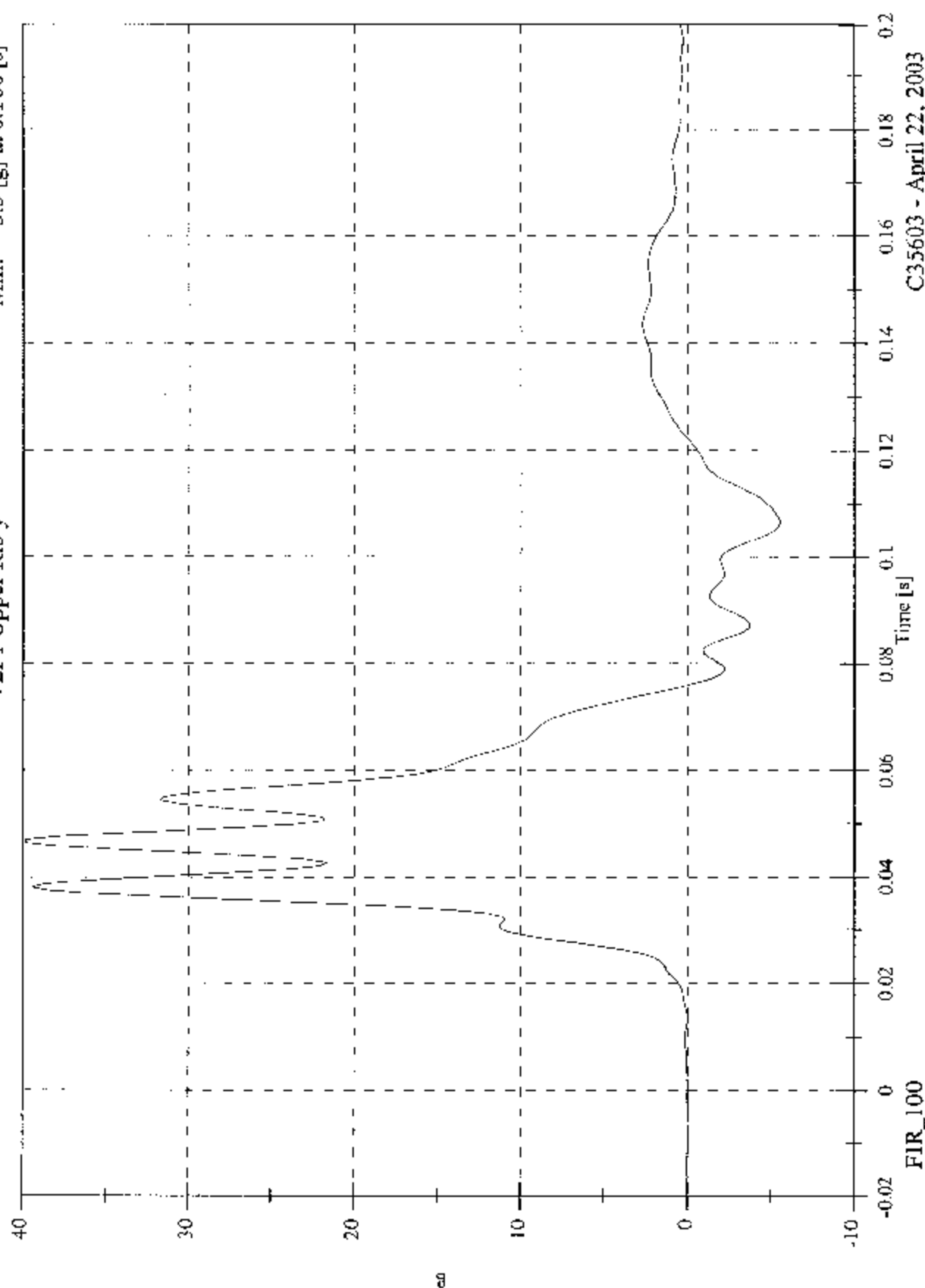


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FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Upper Rib y

Max: 39.9 [g] at 0.046 [s]
Min: -5.5 [g] at 0.106 [s]

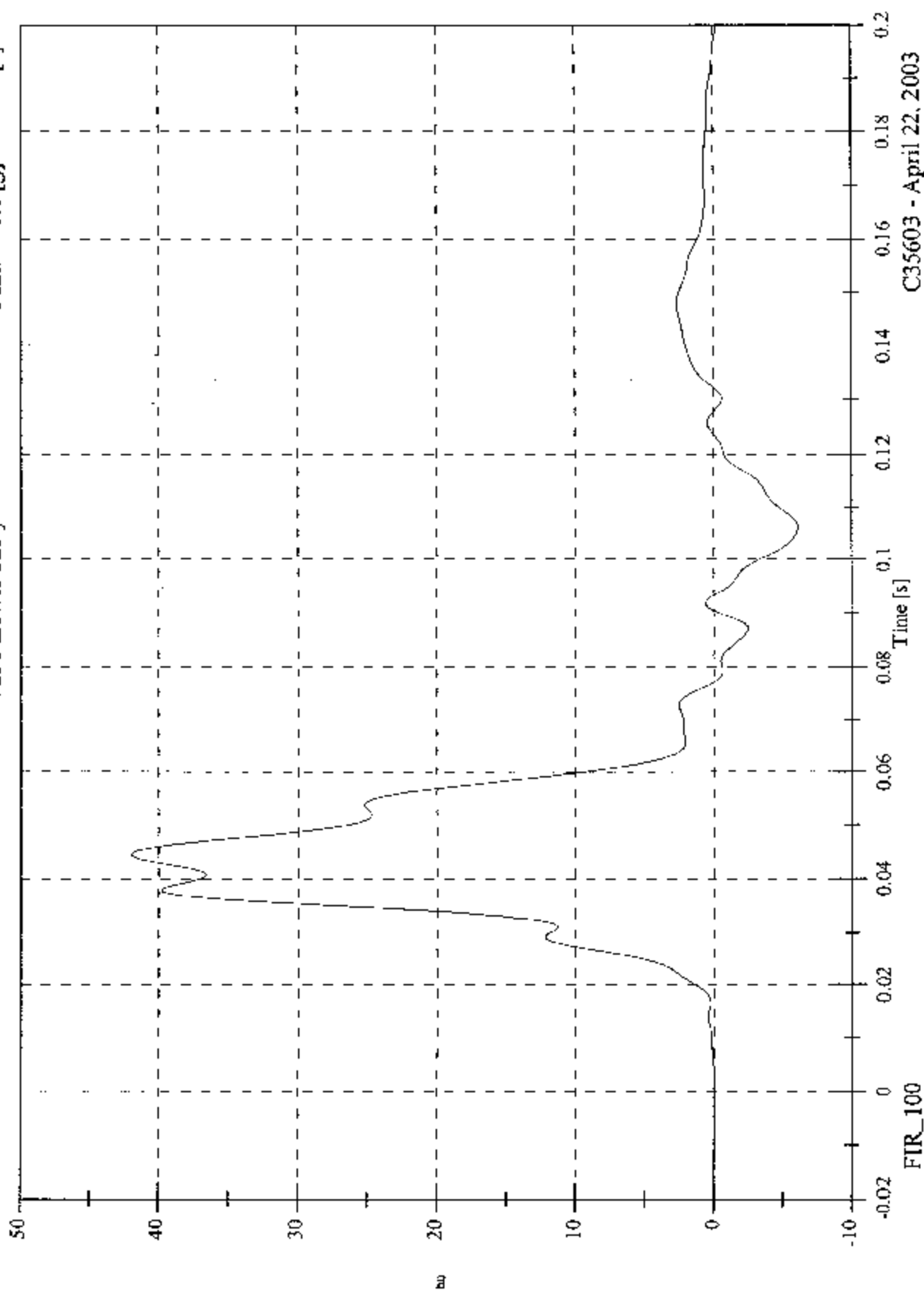


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Lower Rib y

Max: 42.0 [g] at 0.044 [s]
Min: -6.1 [g] at 0.106 [s]

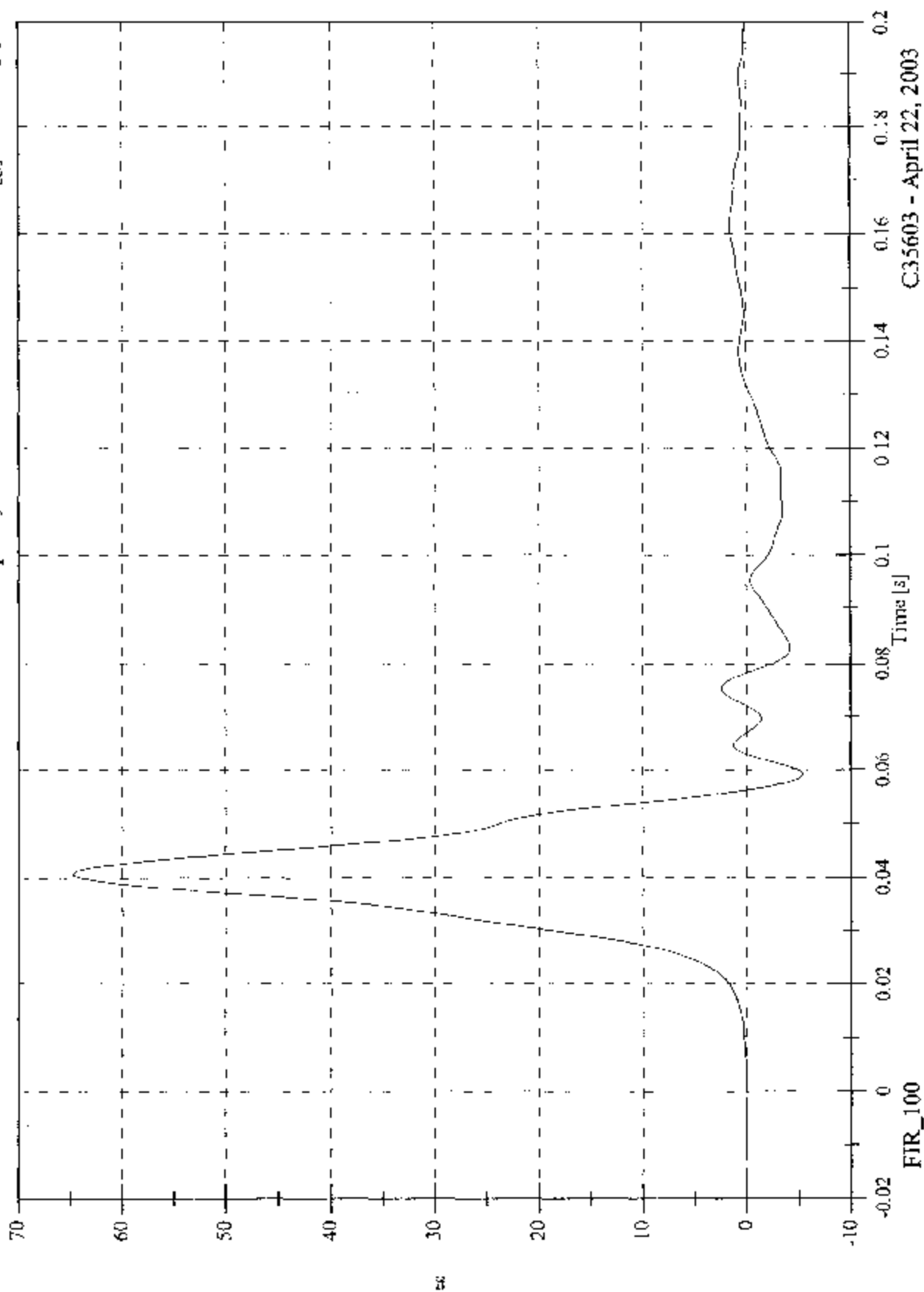


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Max: 64.8 [g] at 0.041 [s]
Min: -5.4 [g] at 0.059 [s]

V2P1 Lower Spine y



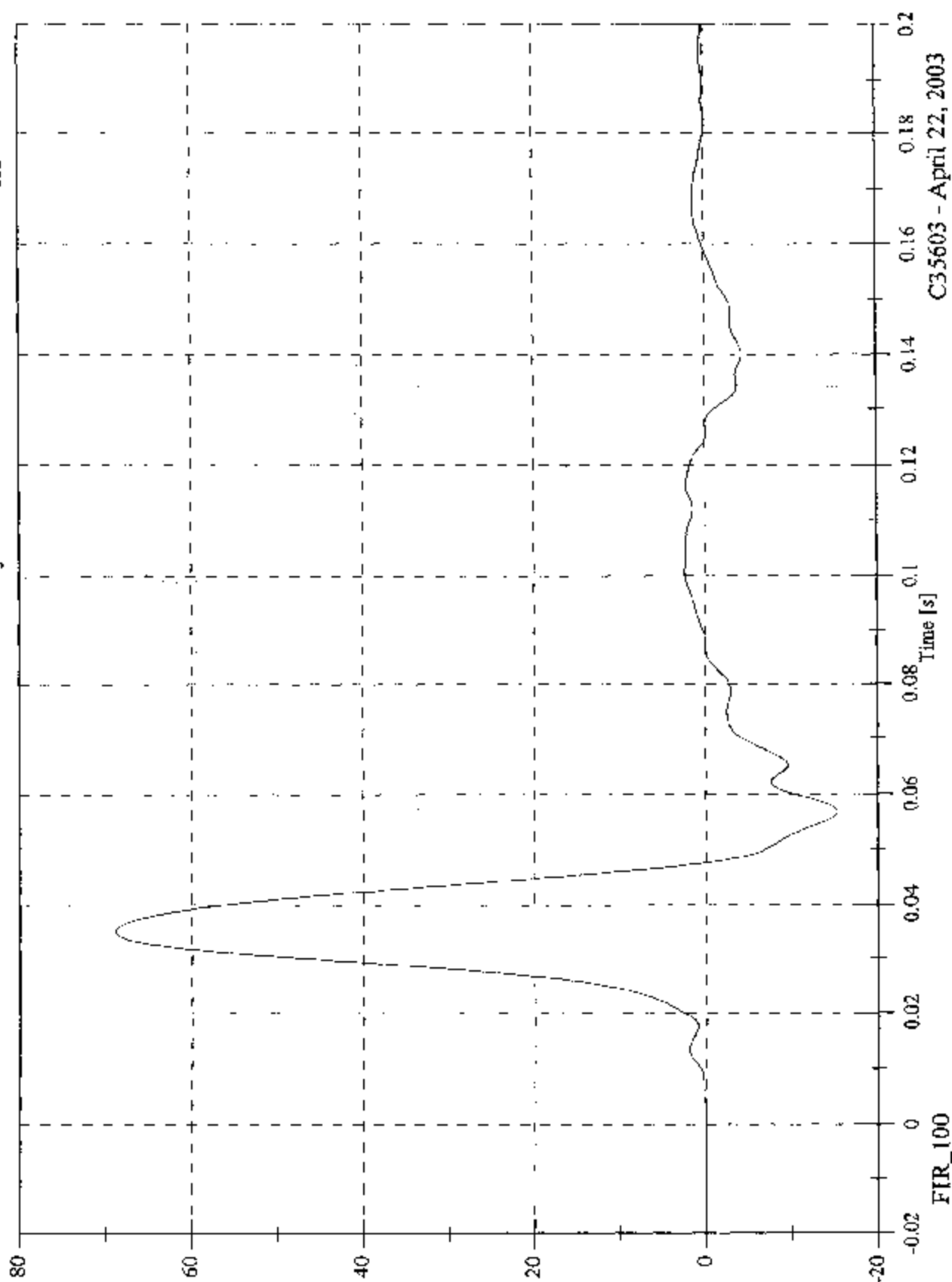
FIR_100

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Pelvic y

Max: 68.9 [g] at 0.035 [s]
Min: -15.3 [g] at 0.057 [s]



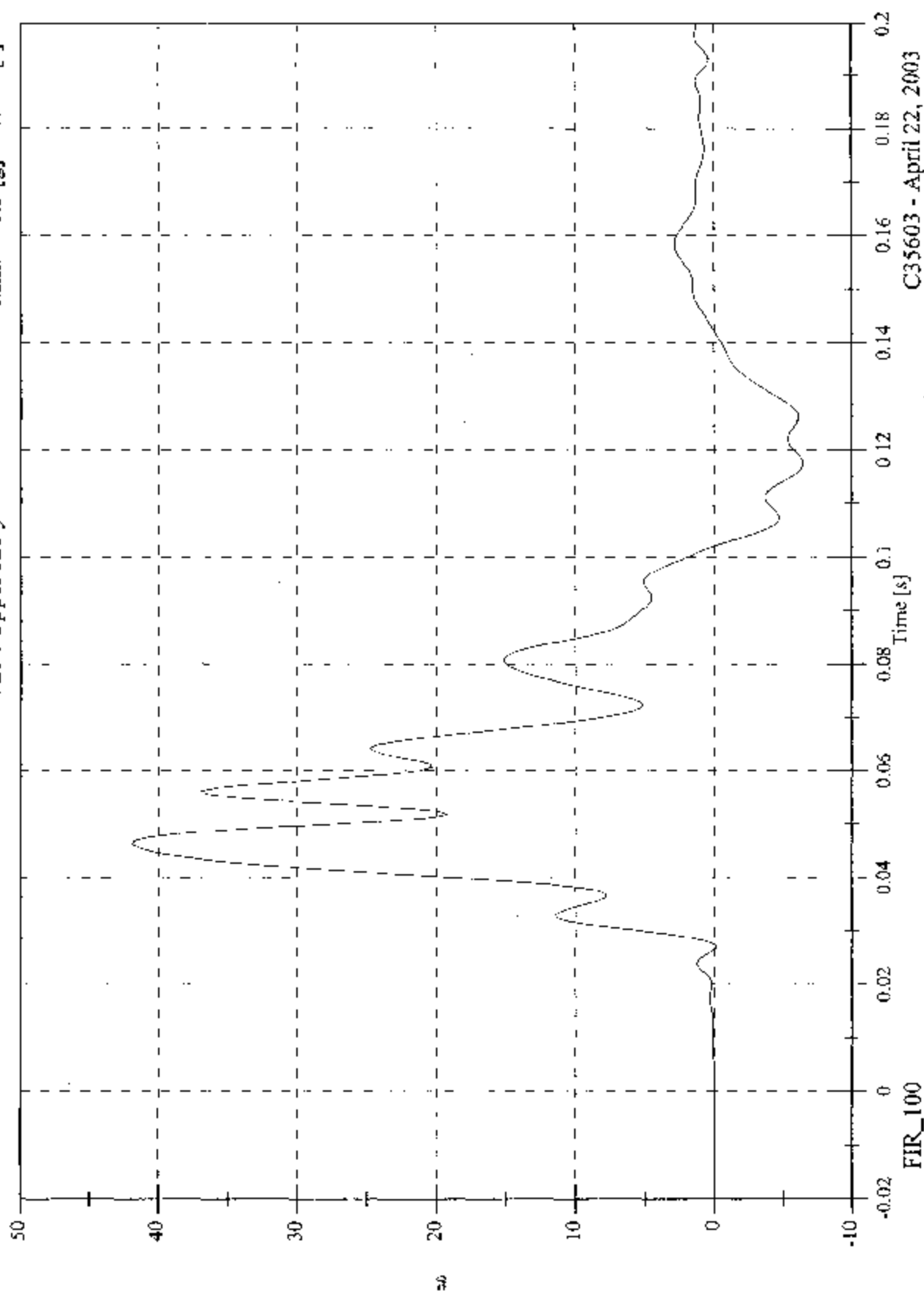
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Upper Rib y

Max: 41.9 [g] at 0.046 [s]

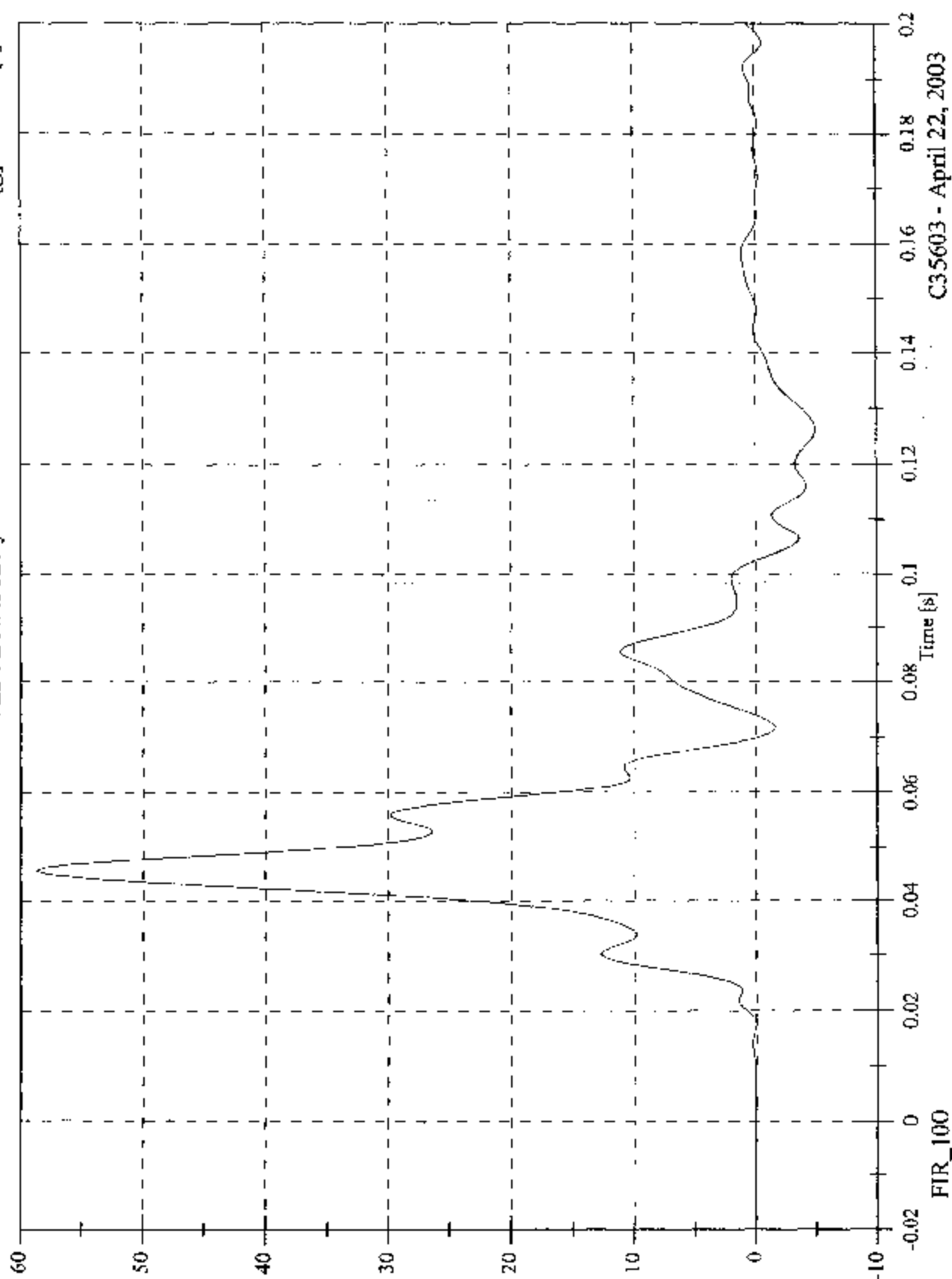
Min: -6.5 [g] at 0.117 [s]



FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Lower Rib y

Max: 58.7 [g] at 0.046 [s]
Min: -4.9 [g] at 0.126 [s]

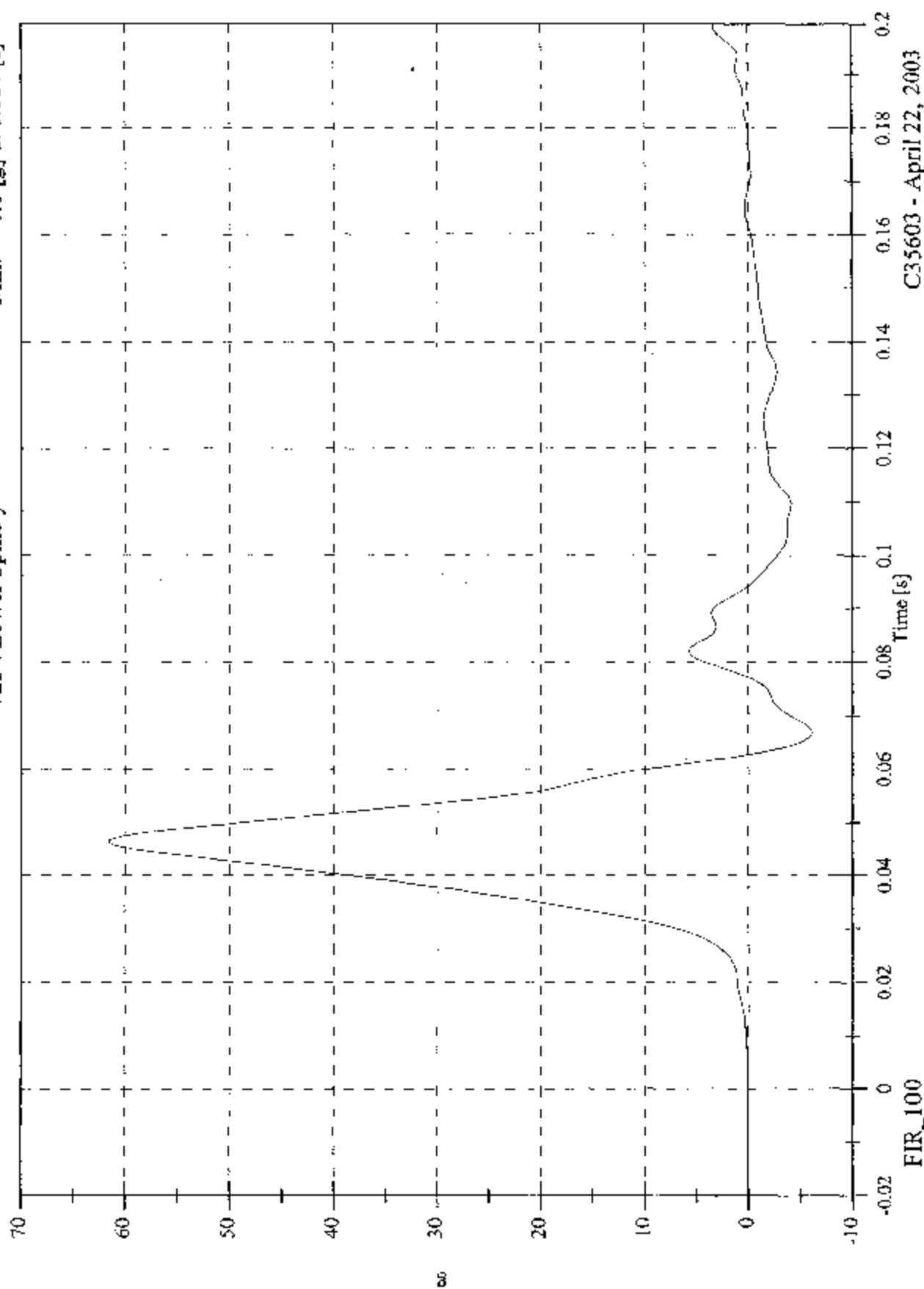


FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Lower Spine y

Max: 61.5 [g] at 0.046 [s]

Min: -6.0 [g] at 0.067 [s]

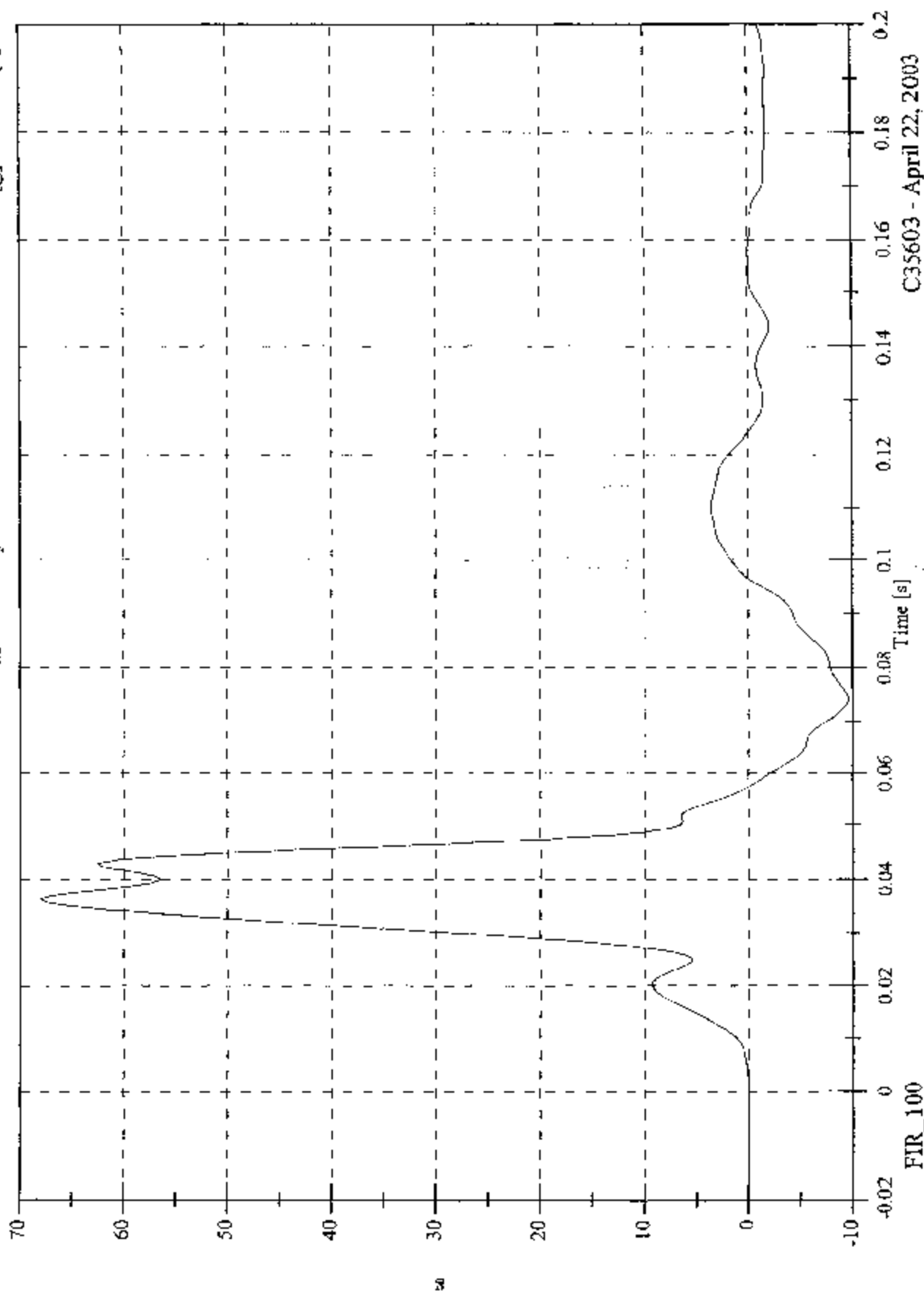


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FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 68.0 [g] at 0.036 [s]
Min: -9.6 [g] at 0.074 [s]

V2P4 Pelvic y



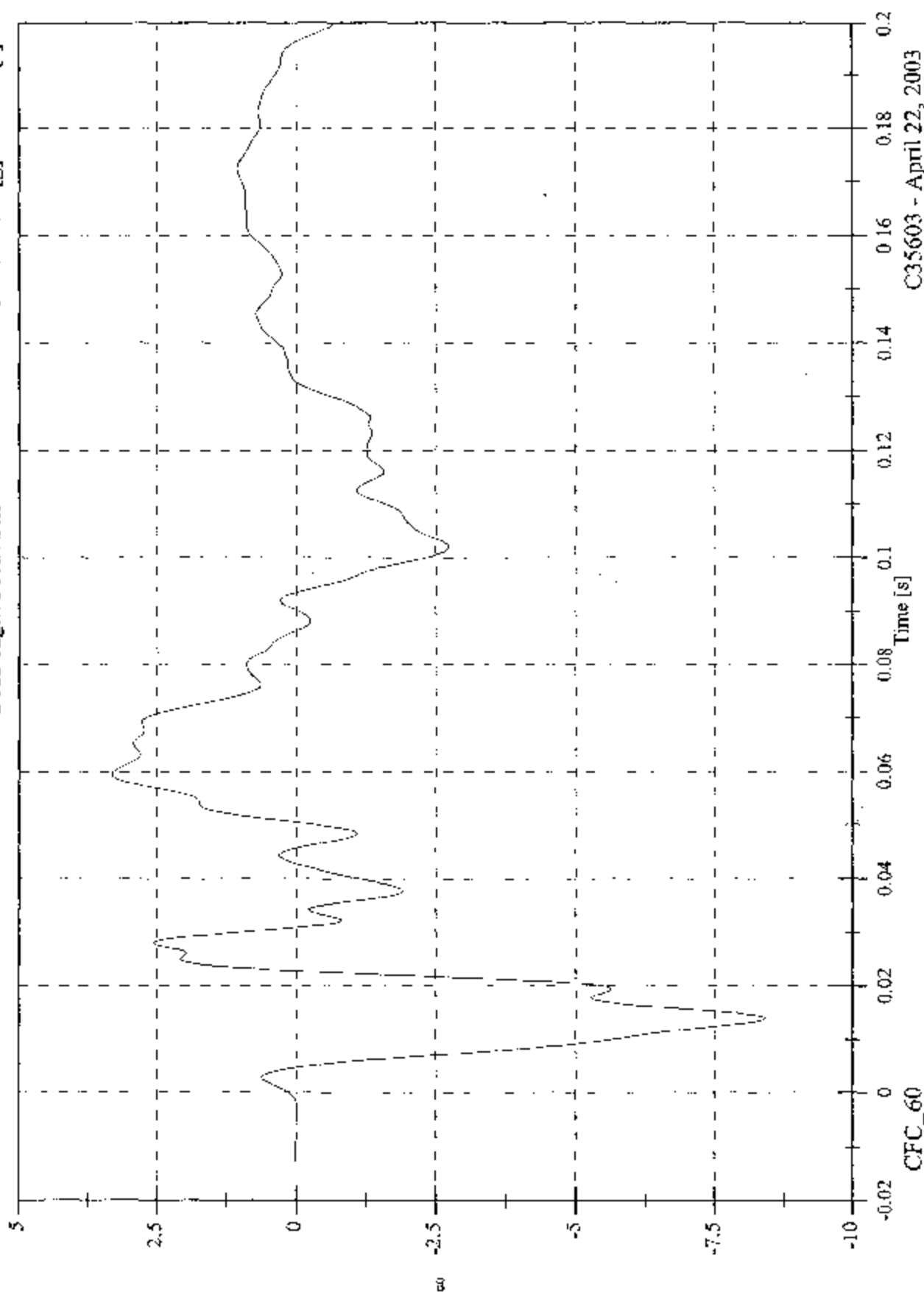
FIR_100

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FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A1 Right Front Sill x

Max: 3.3 [g] at 0.059 [s]
Min: -8.4 [g] at 0.014 [s]



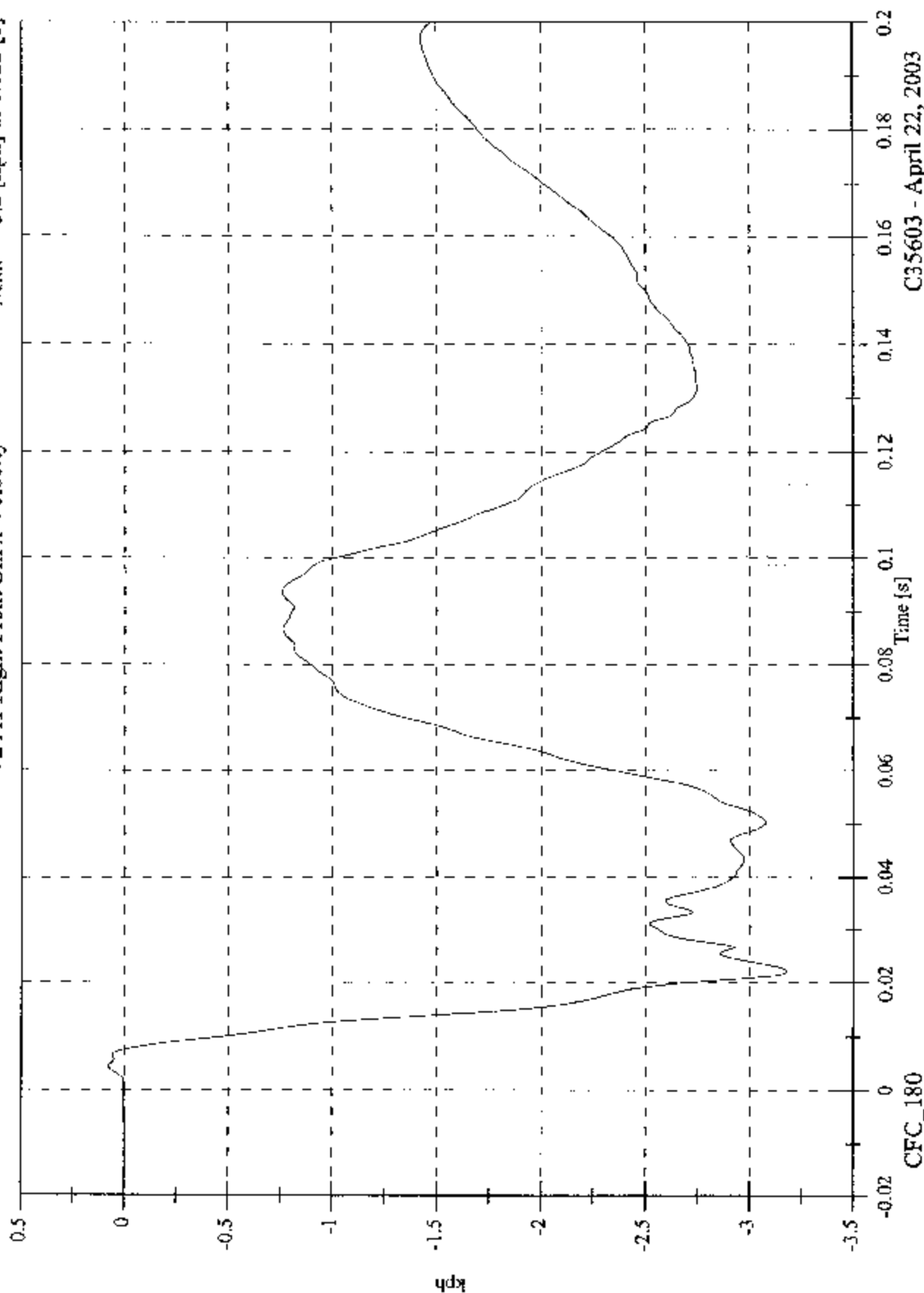
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A1 Right Front Sill x Velocity

Max: 0.1 [kph] at 0.004 [s]

Min: -3.2 [kph] at 0.022 [s]

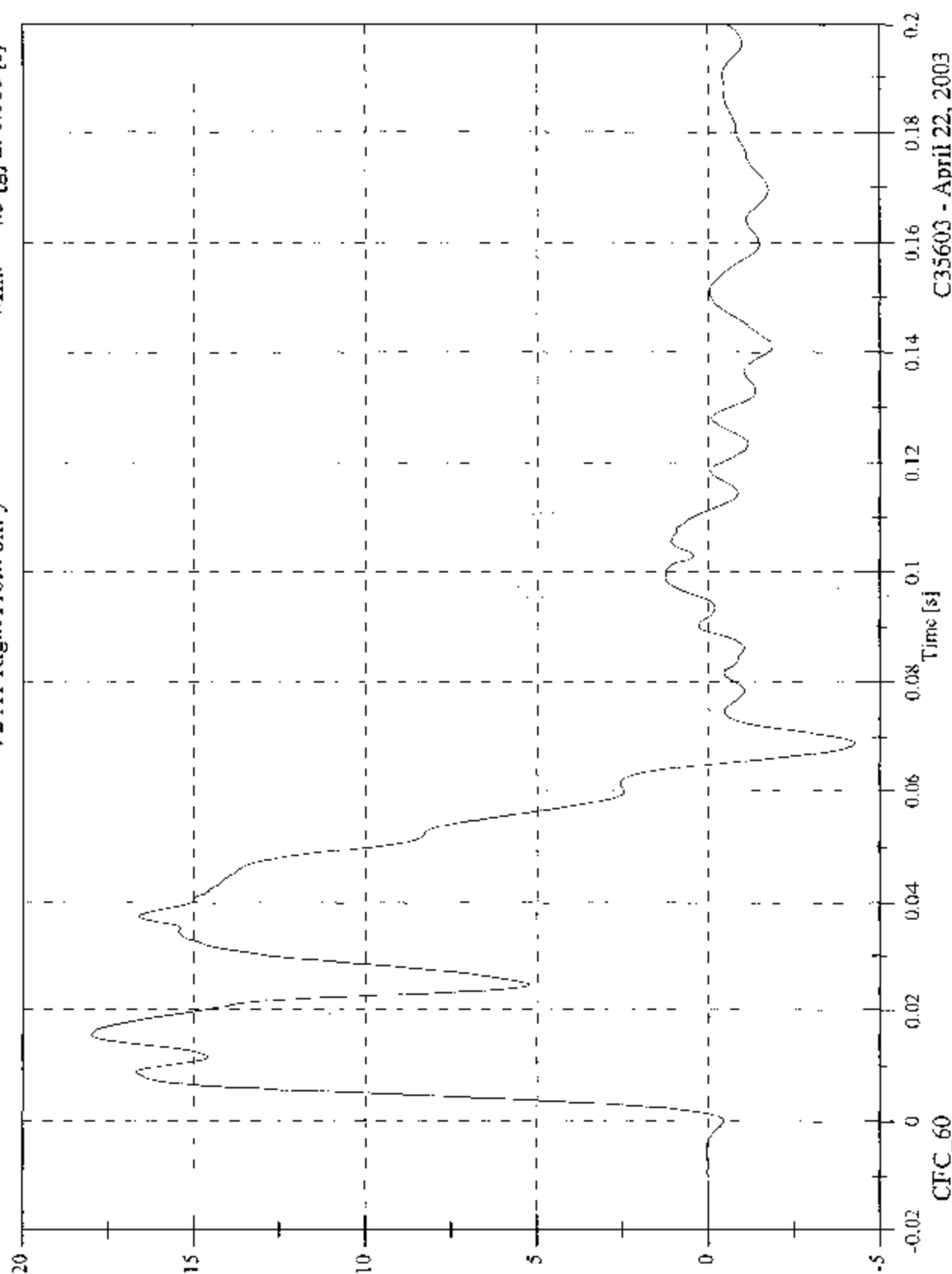


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A1 Right Front Sill y

Max: 18.0 [g] at 0.016 [s]
Min: -4.3 [g] at 0.069 [s]

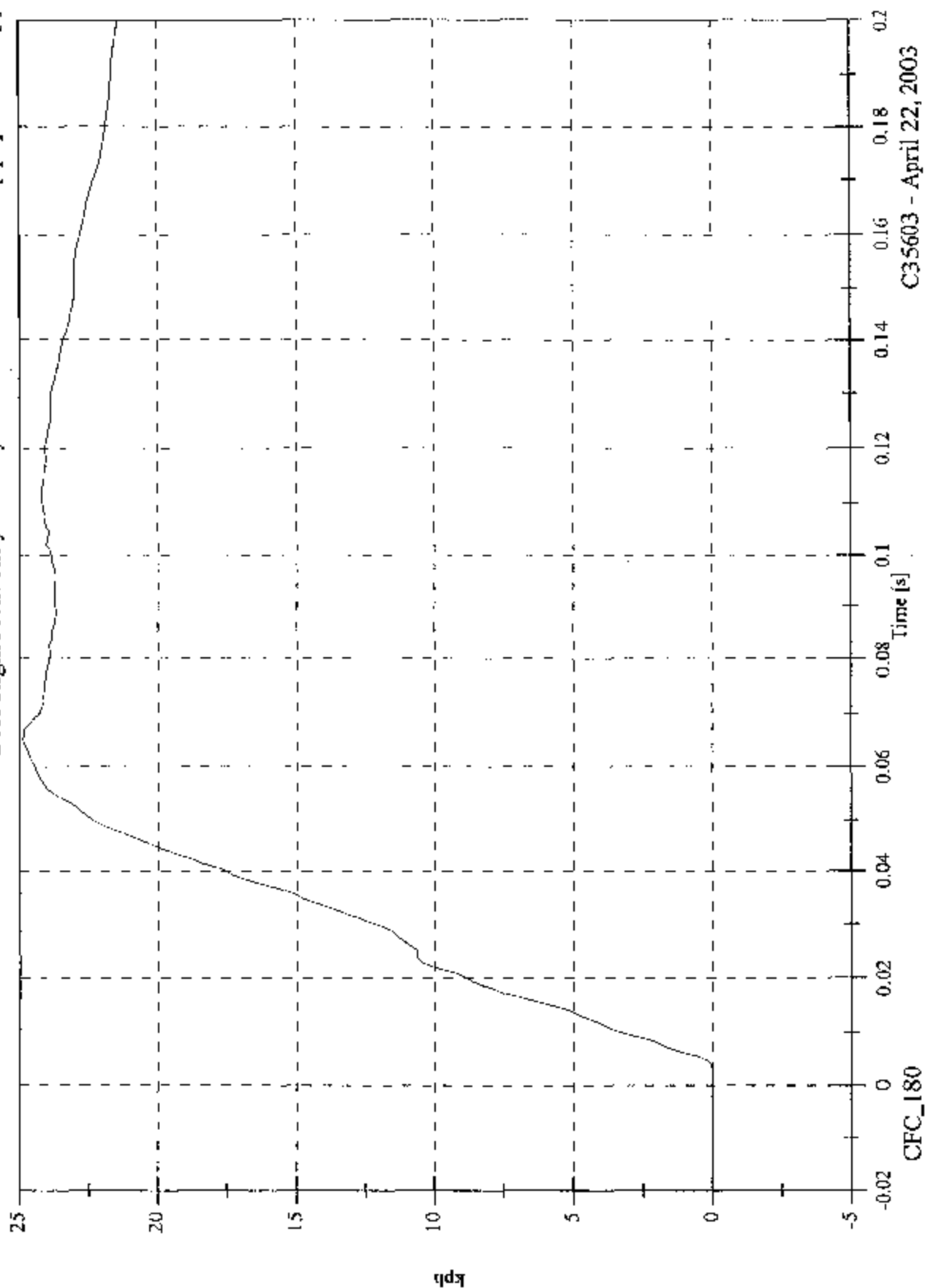


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A1 Right Front Sill y Velocity

Max: 24.9 [kph] at 0.065 [s]
Min: -0.0 [kph] at -0.020 [s]



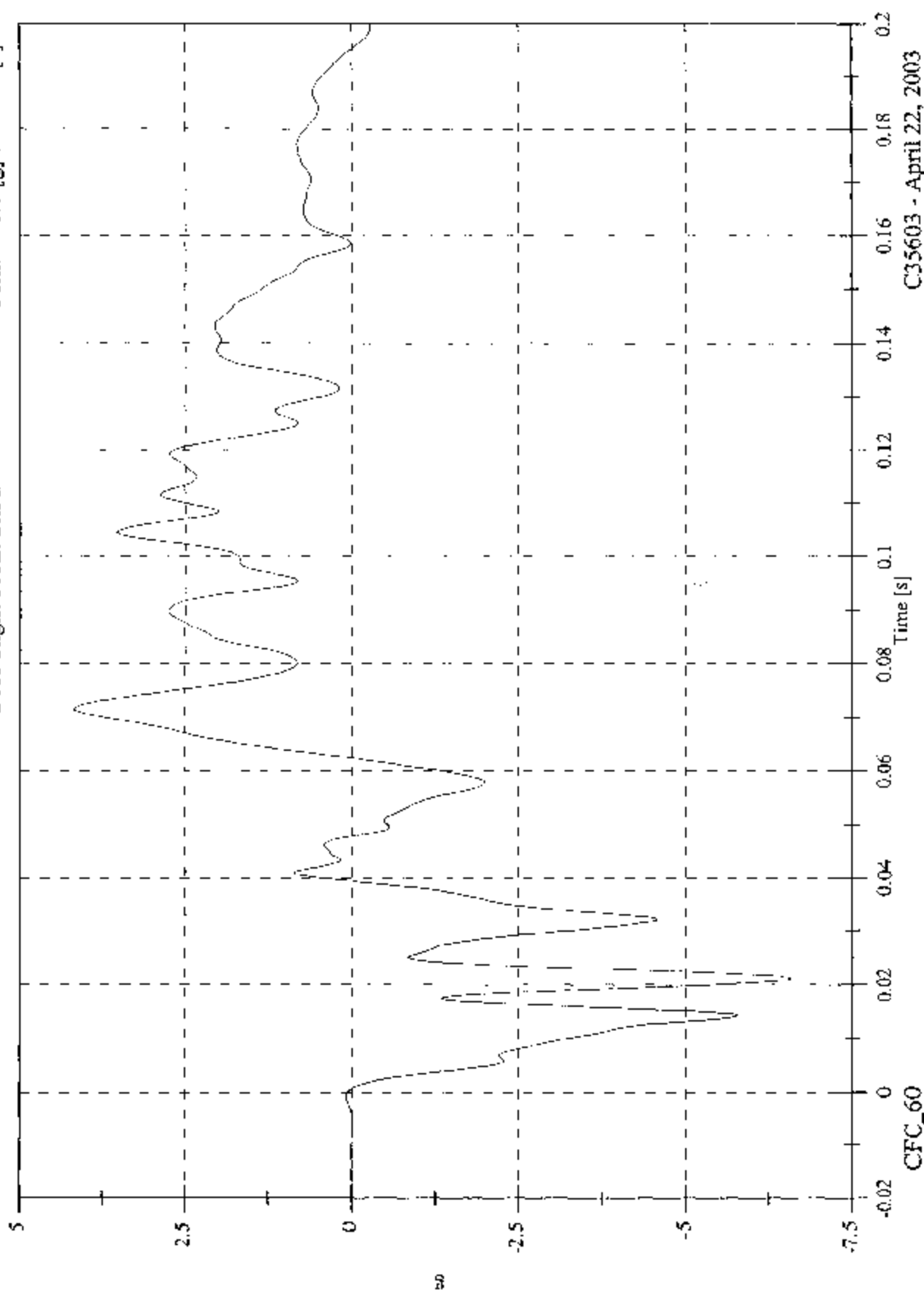
C35603 - April 22, 2003

FMVSS 214D Inducant - 2003 Mitsubishi Outlander

V2 A1 Right Front Sill z

Max: 4.2 [g] at 0.072 [s]

Min: -6.6 [g] at 0.021 [s]



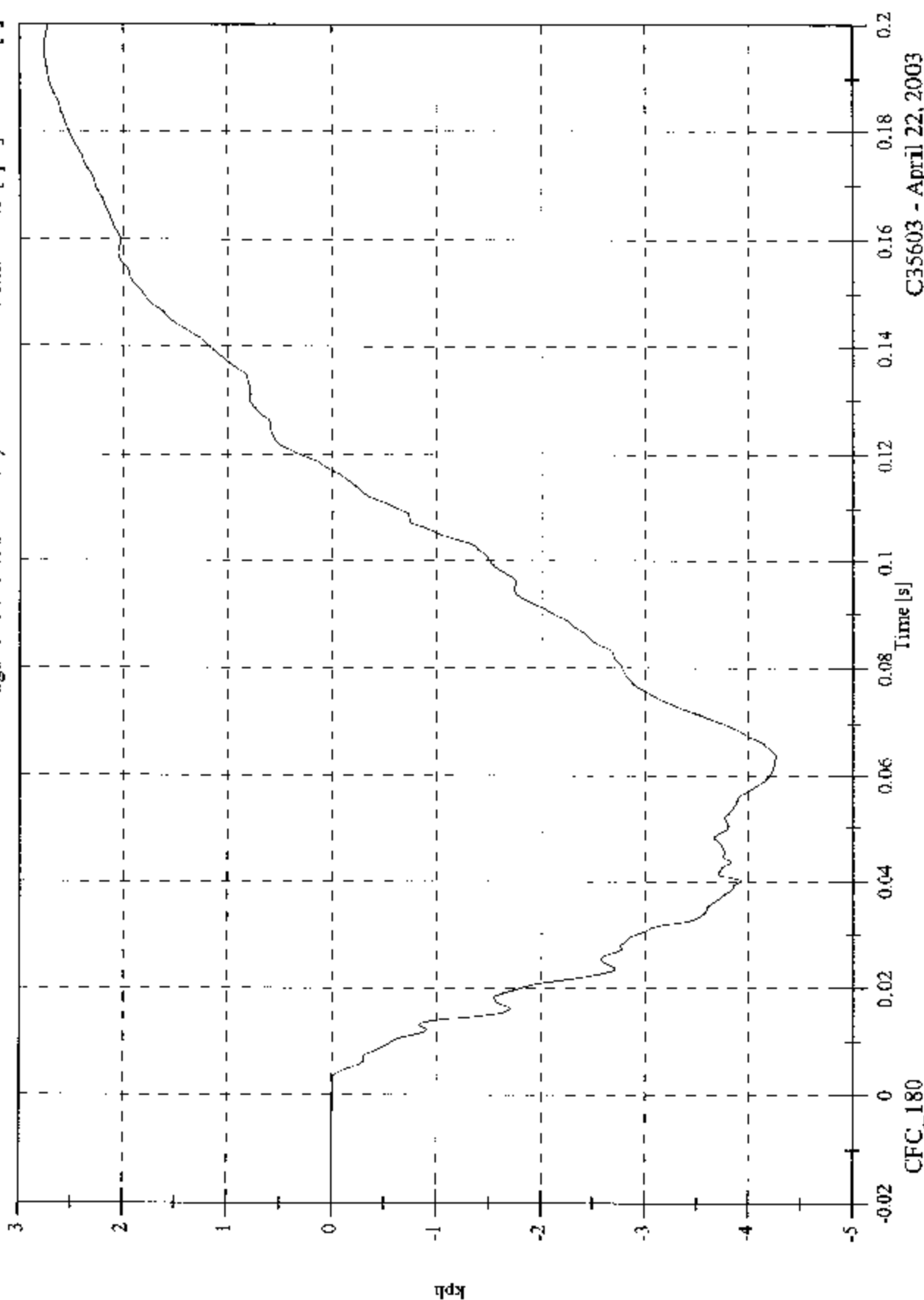
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A1 Right Front Sill z Velocity

Max: 2.8 [kph] at 0.195 [s]

Min: -4.3 [kph] at 0.063 [s]

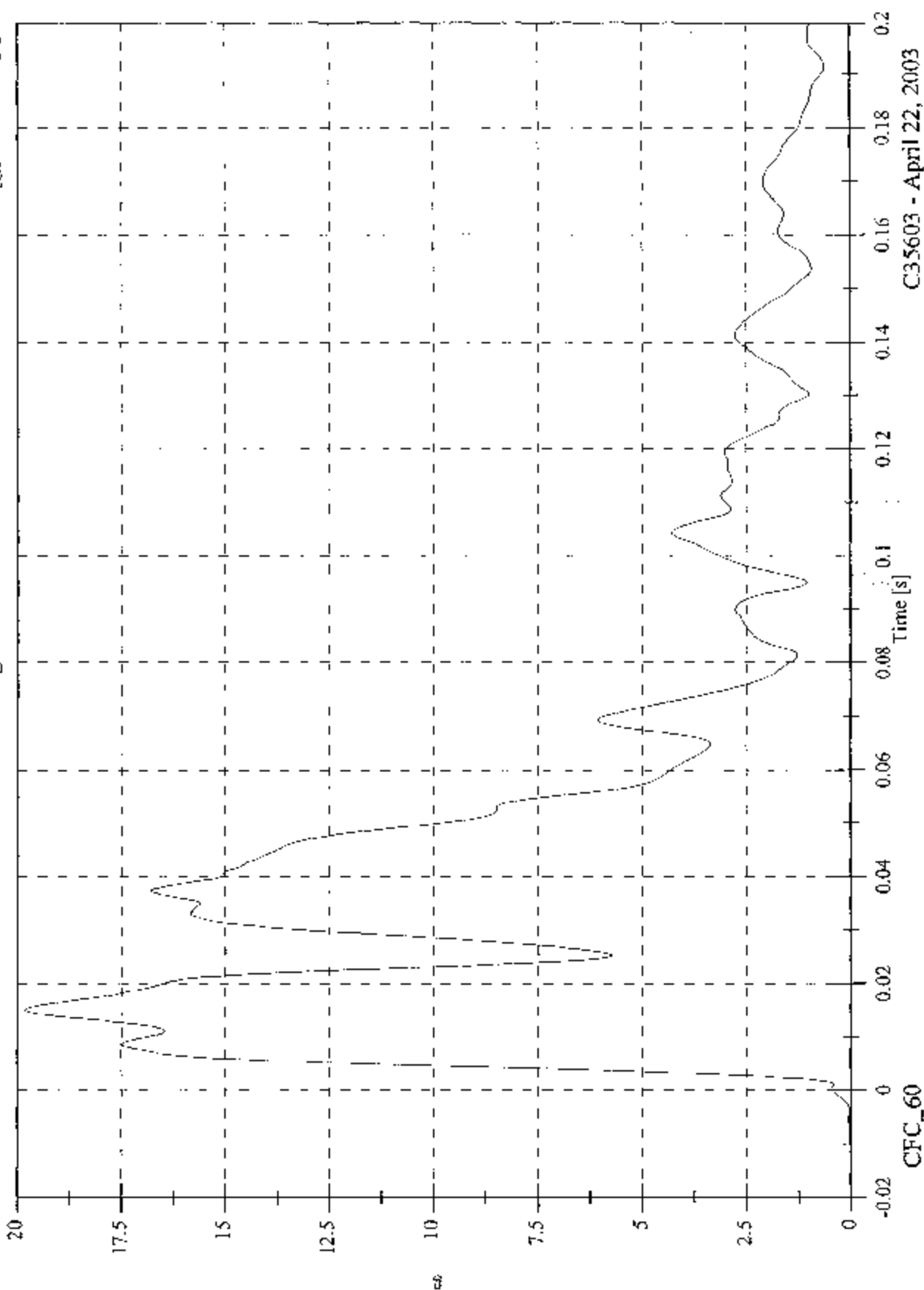


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 19.8 [g] at 0.015 [s]
Min: 0.0 [g] at -0.019 [s]

V2 A1 Right Front Sill Resultant



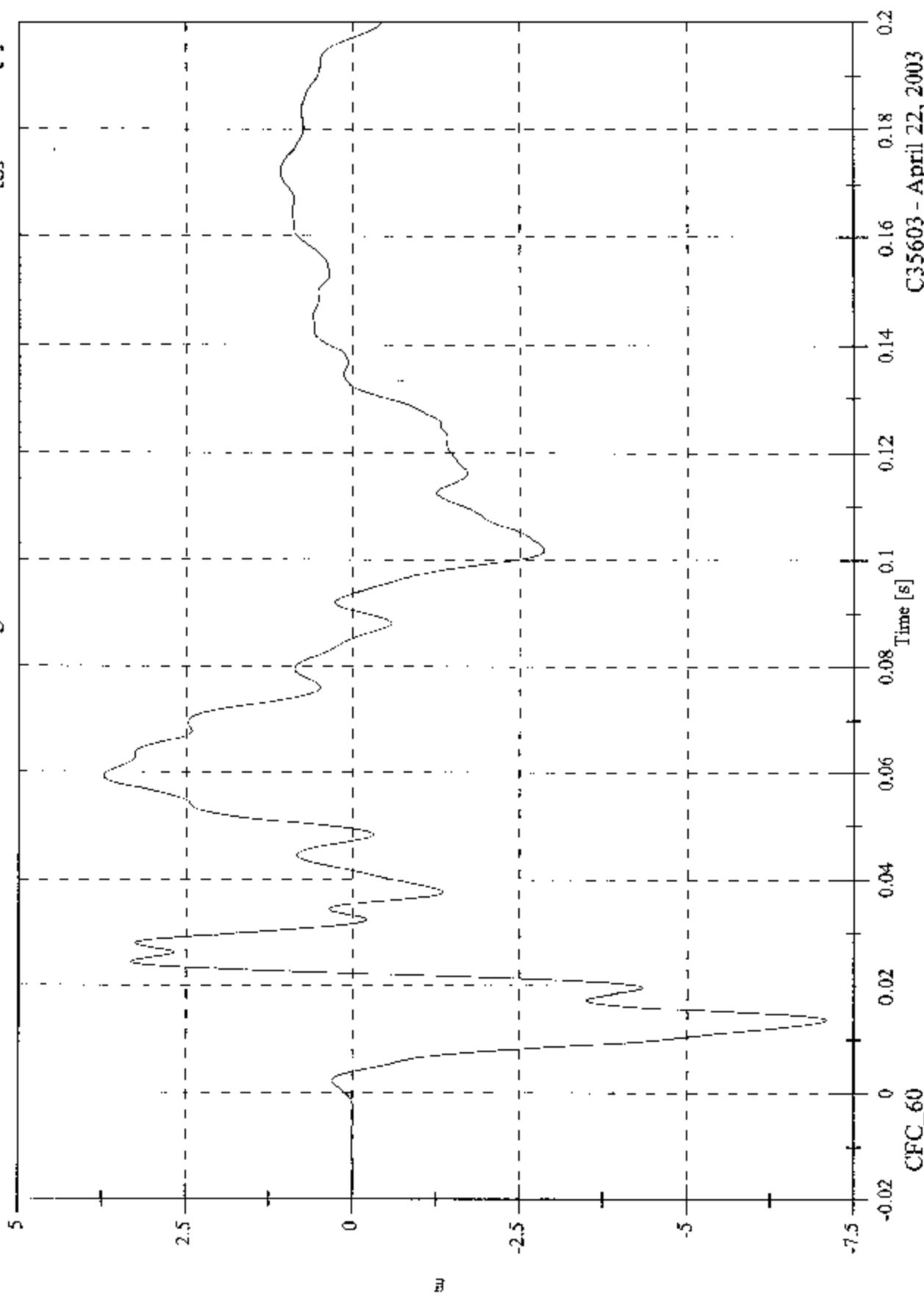
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A2 Right Rear Sill x

Max: 3.7 [g] at 0.059 [s]

Min: -7.1 [g] at 0.014 [s]

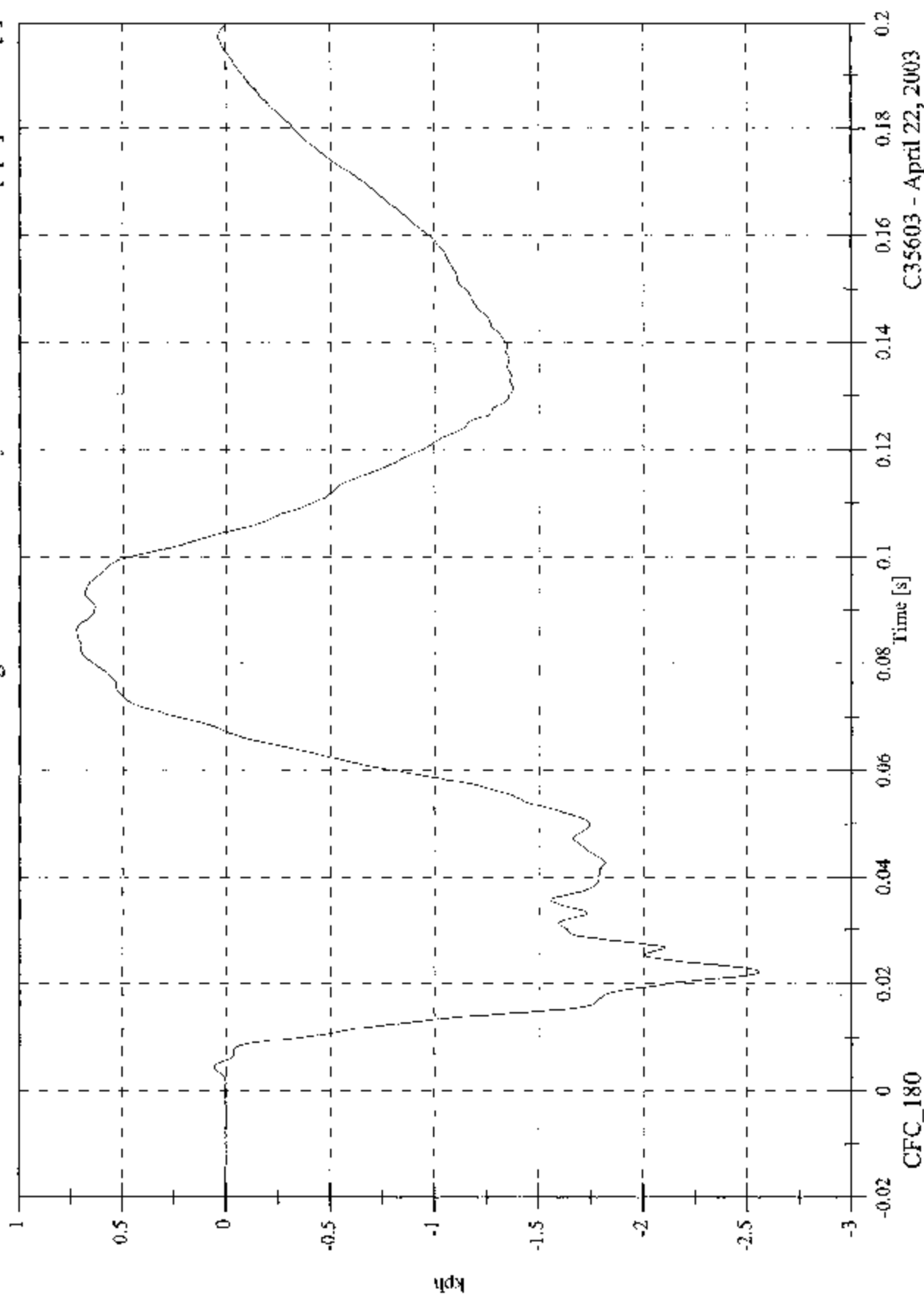


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A2 Right Rear Sill x Velocity

Max: 0.7 [kph] at 0.086 [s]
Min: -2.6 [kph] at 0.022 [s]

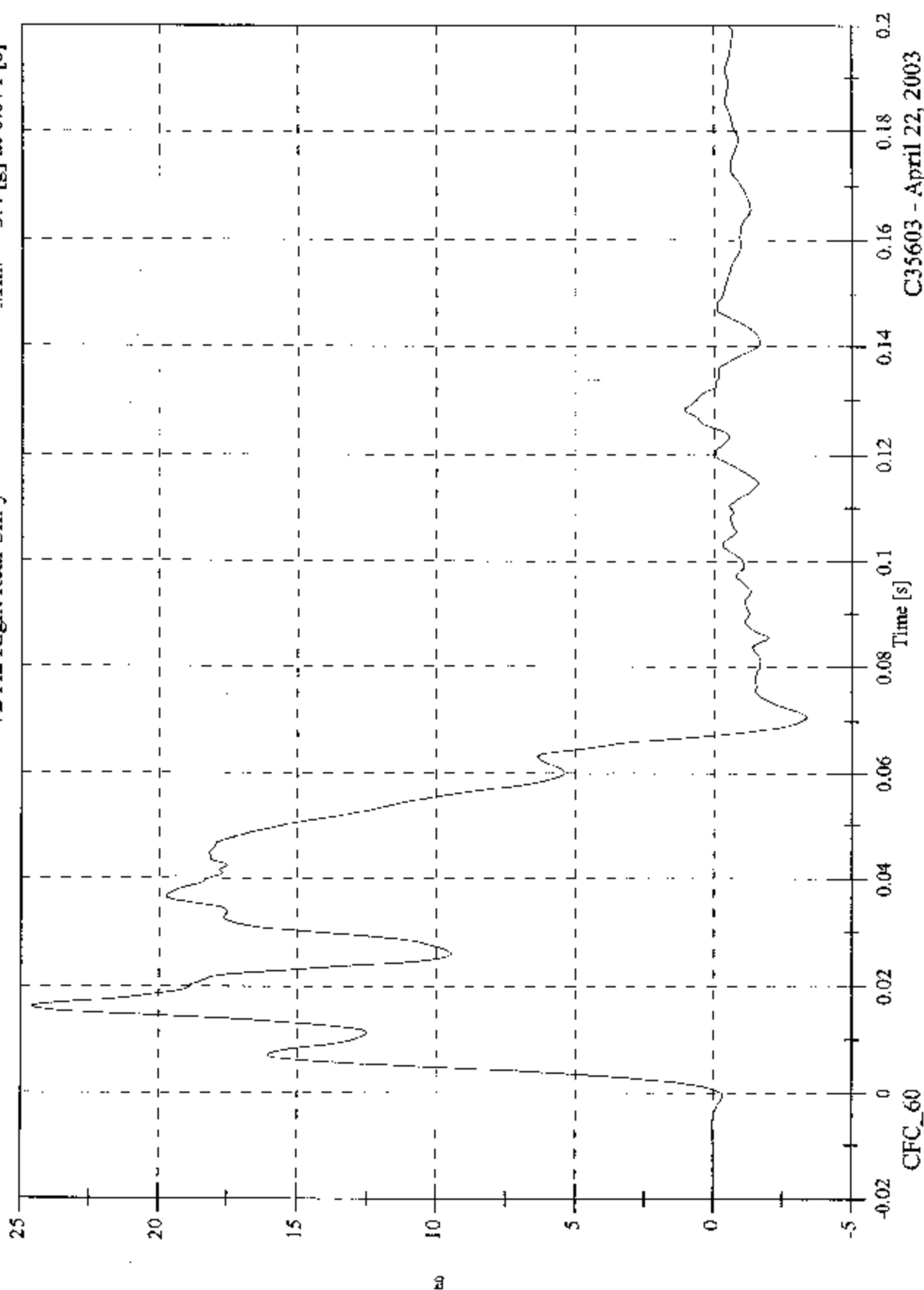


C35603 - April 22, 2003

FMVSS 214D Inducant - 2003 Mitsubishi Outlander

V2 A2 Right Rear Sill y

Max: 24.6 [g] at 0.016 [s]
Min: -3.4 [g] at 0.071 [s]

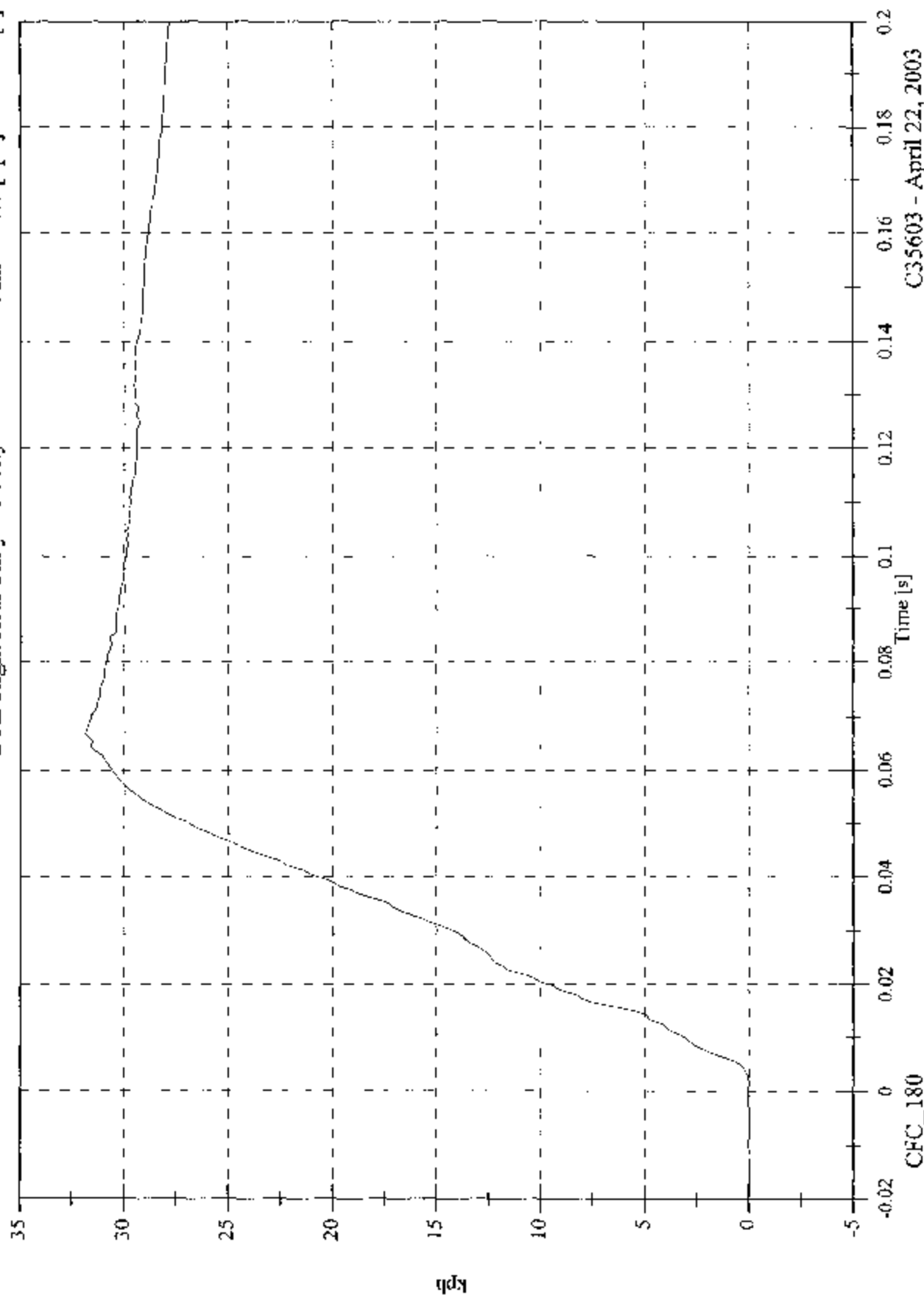


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A2 Right Rear Sill y Velocity

Max: 31.9 [kph] at 0.067 [s]
Min: -0.0 [kph] at -0.019 [s]



CFC_180

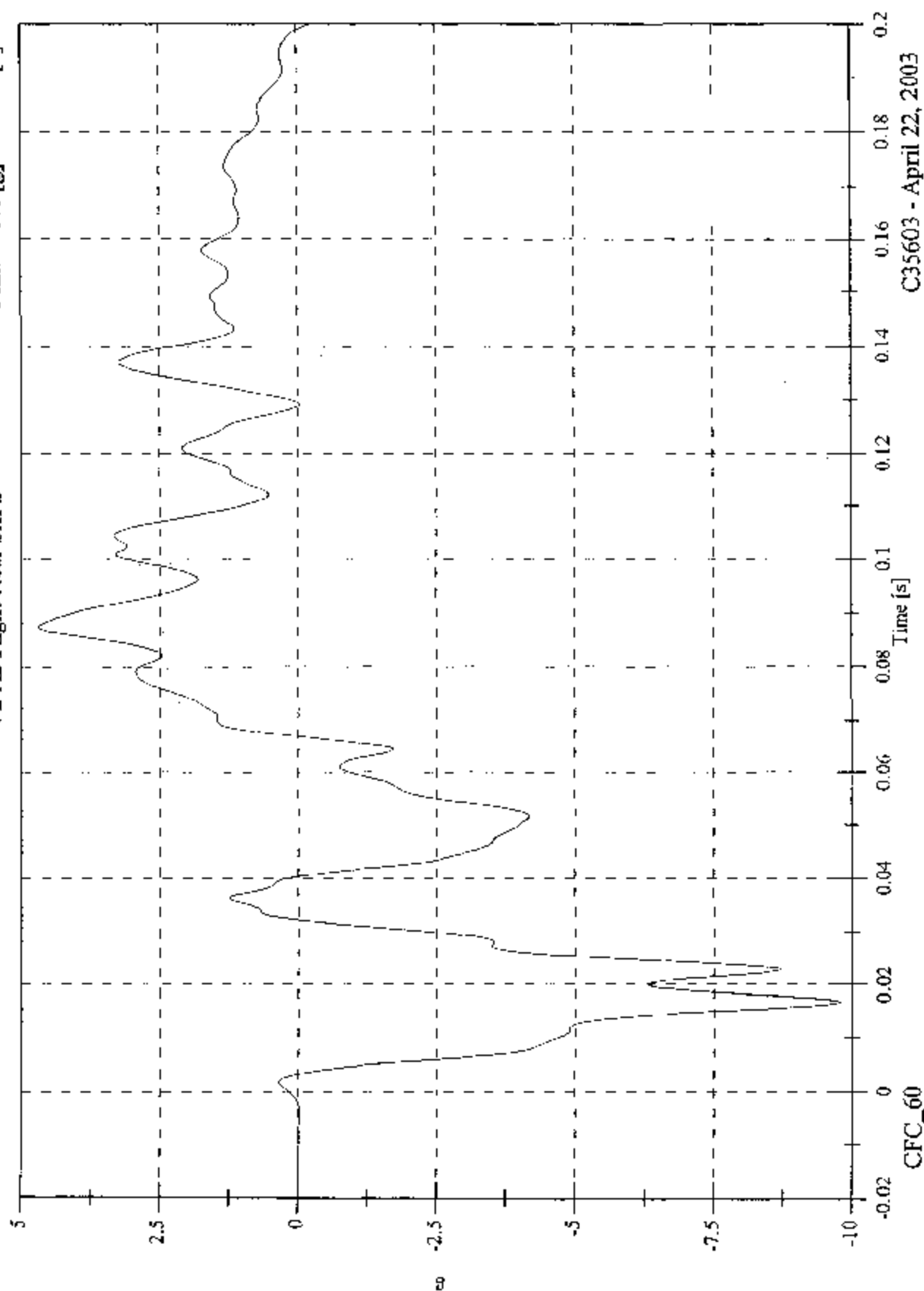
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A2 Right Rear Sill z

Max: 4.7 [g] at 0.087 [s]

Min: -9.8 [g] at 0.017 [s]

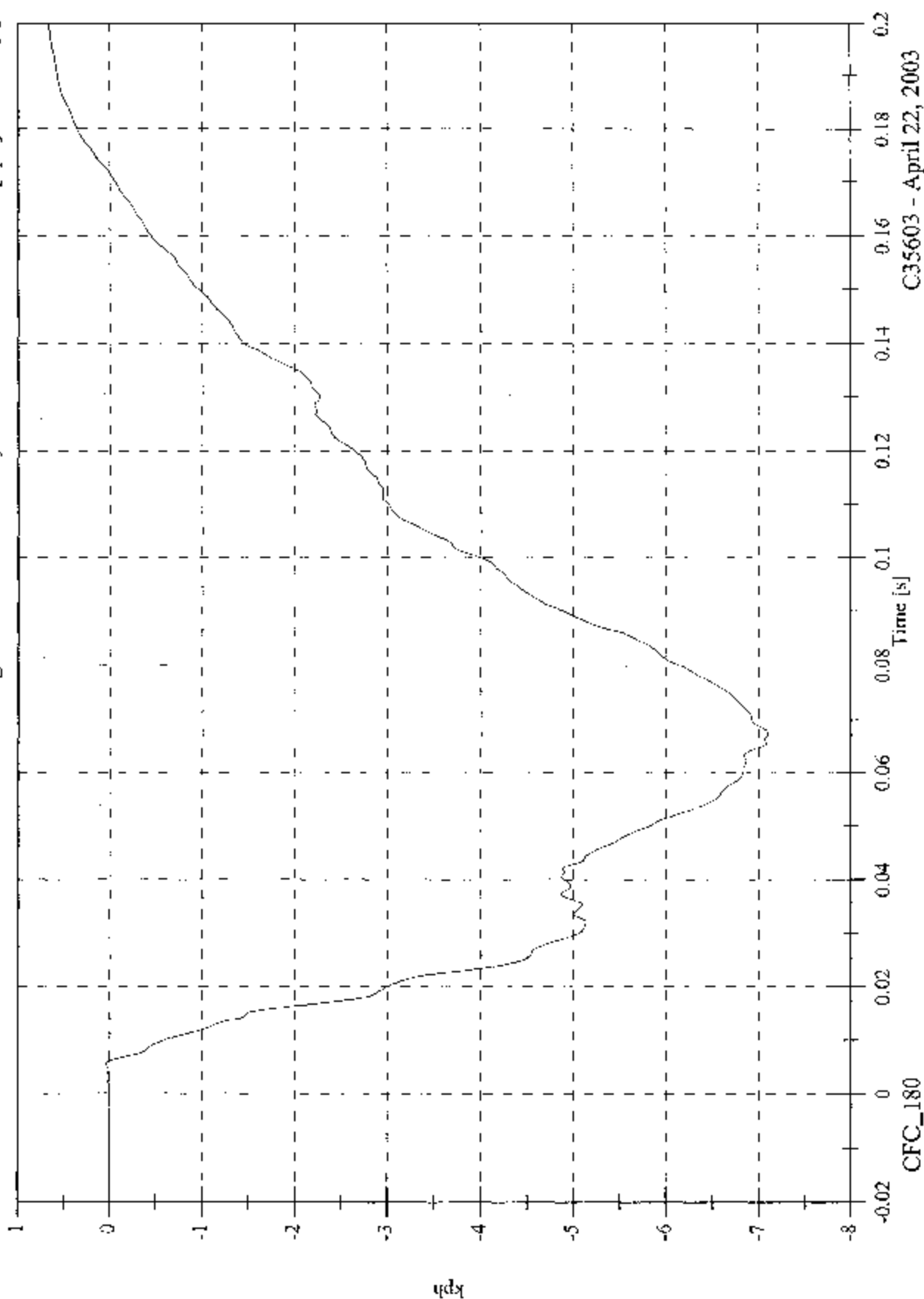


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 0.7 [kph] at 0.199 [s]
 Min: -7.1 [kph] at 0.067 [s]

V2 A2 Right Rear Sill z Velocity



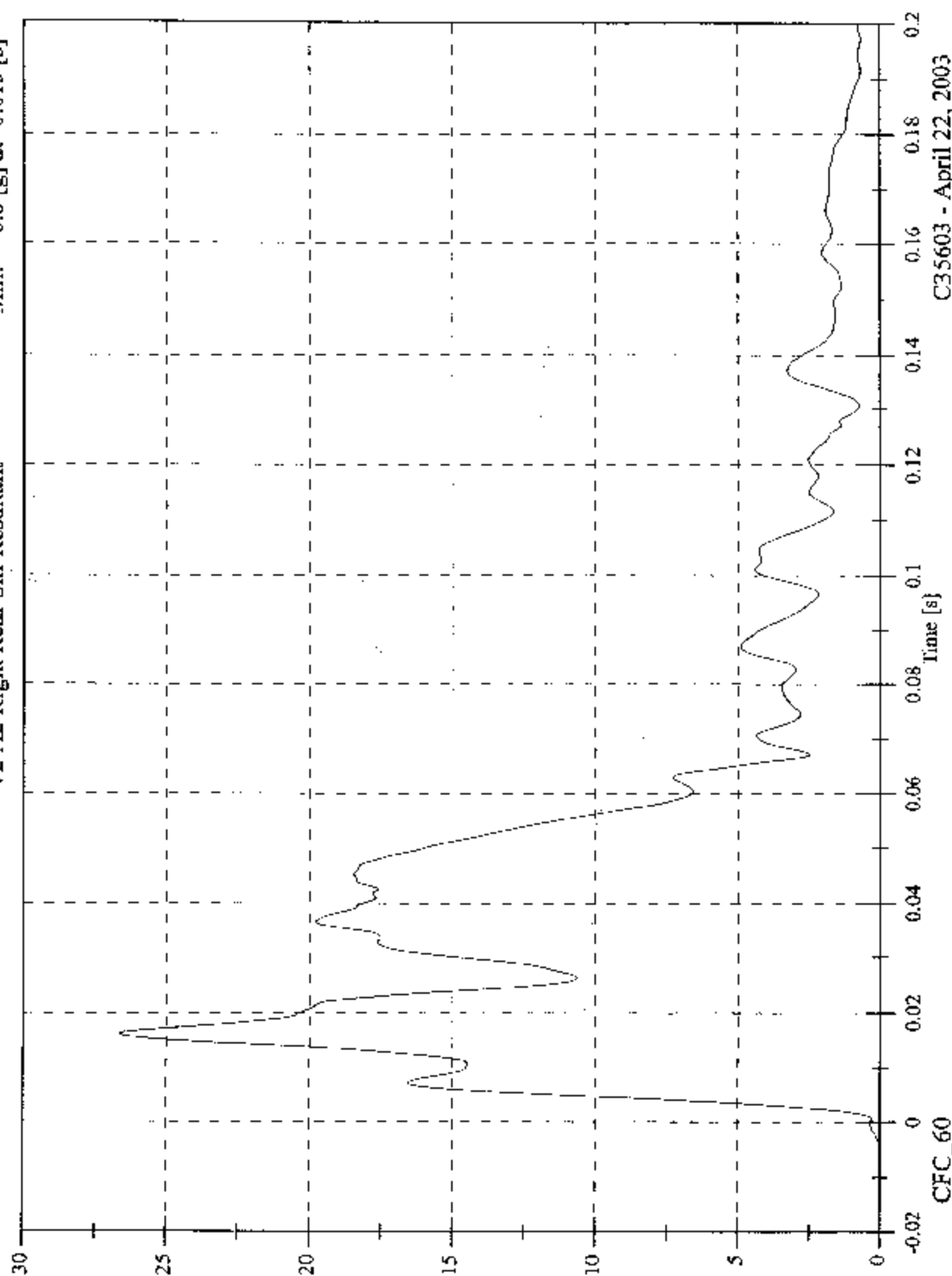
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 26.7 [g] at 0.016 [s]
 Min: 0.0 [g] at -0.015 [s]

V2 A2 Right Rear Sill Resultant



CFC_60

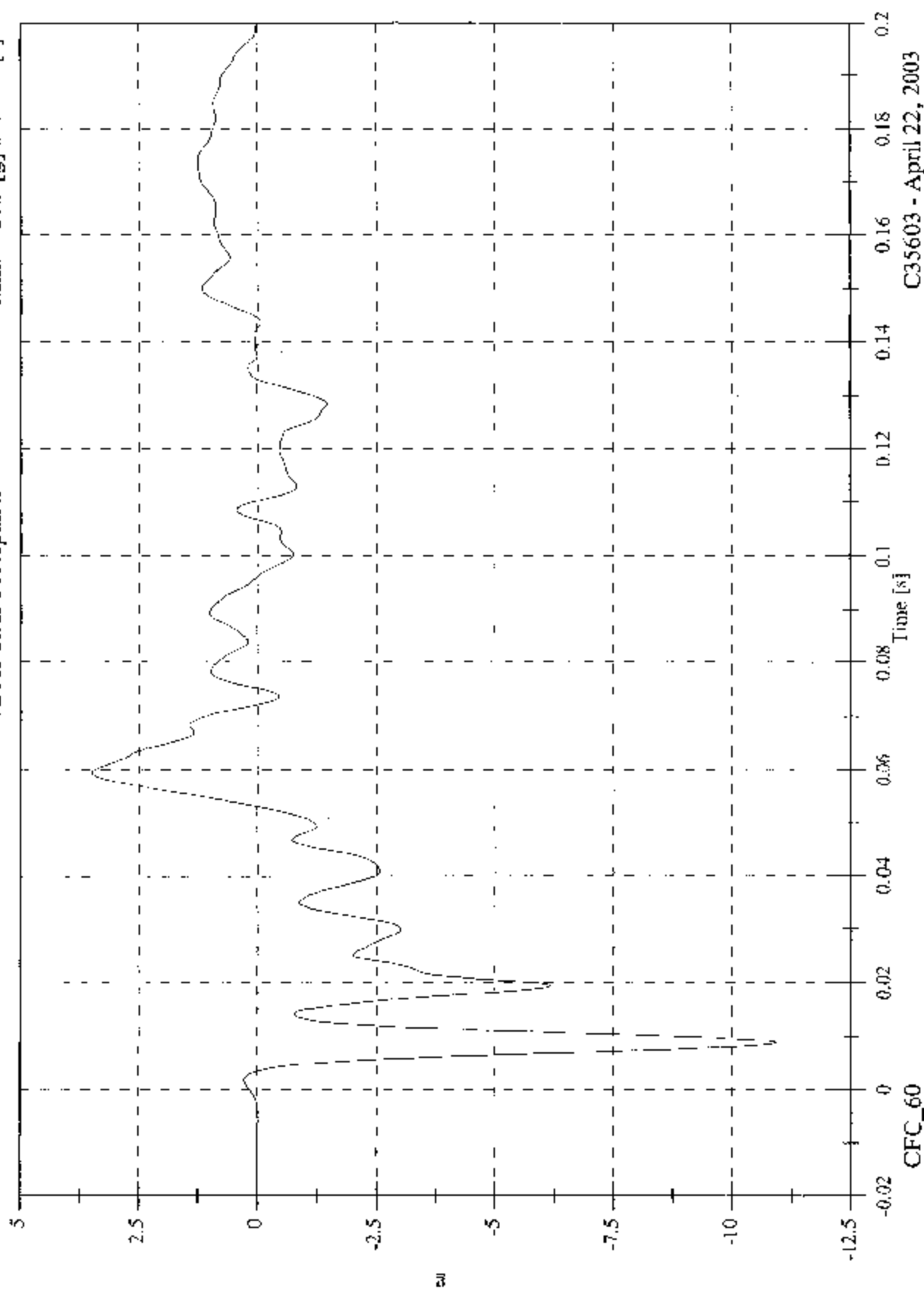
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A3 Rear Floorpan x

Max: 3.5 [g] at 0.059 [s]

Min: -10.9 [g] at 0.009 [s]

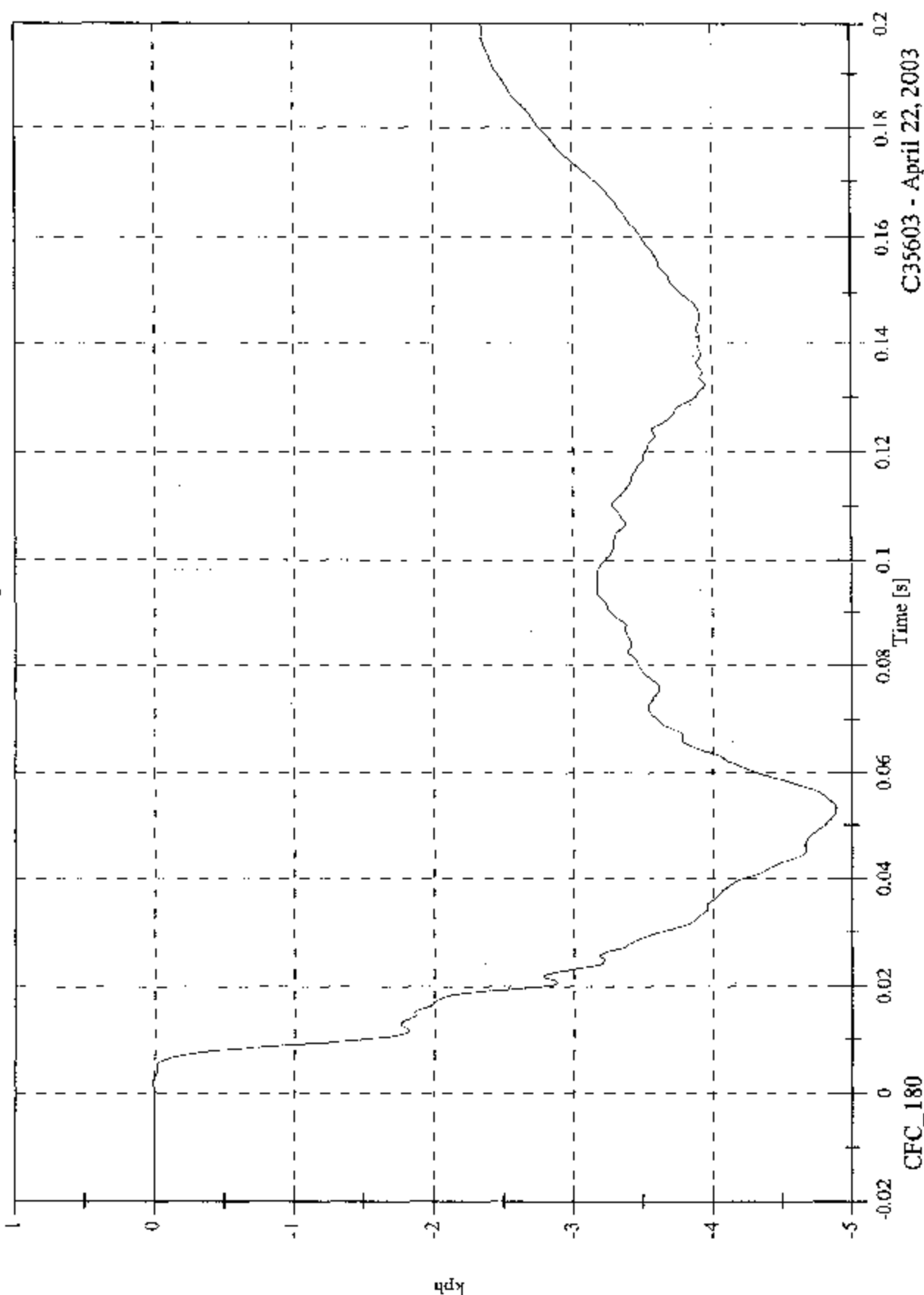


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A3 Rear Floorpan x Velocity

Max: 0.0 [kph] at 0.002 [s]
Min: -4.9 [kph] at 0.053 [s]



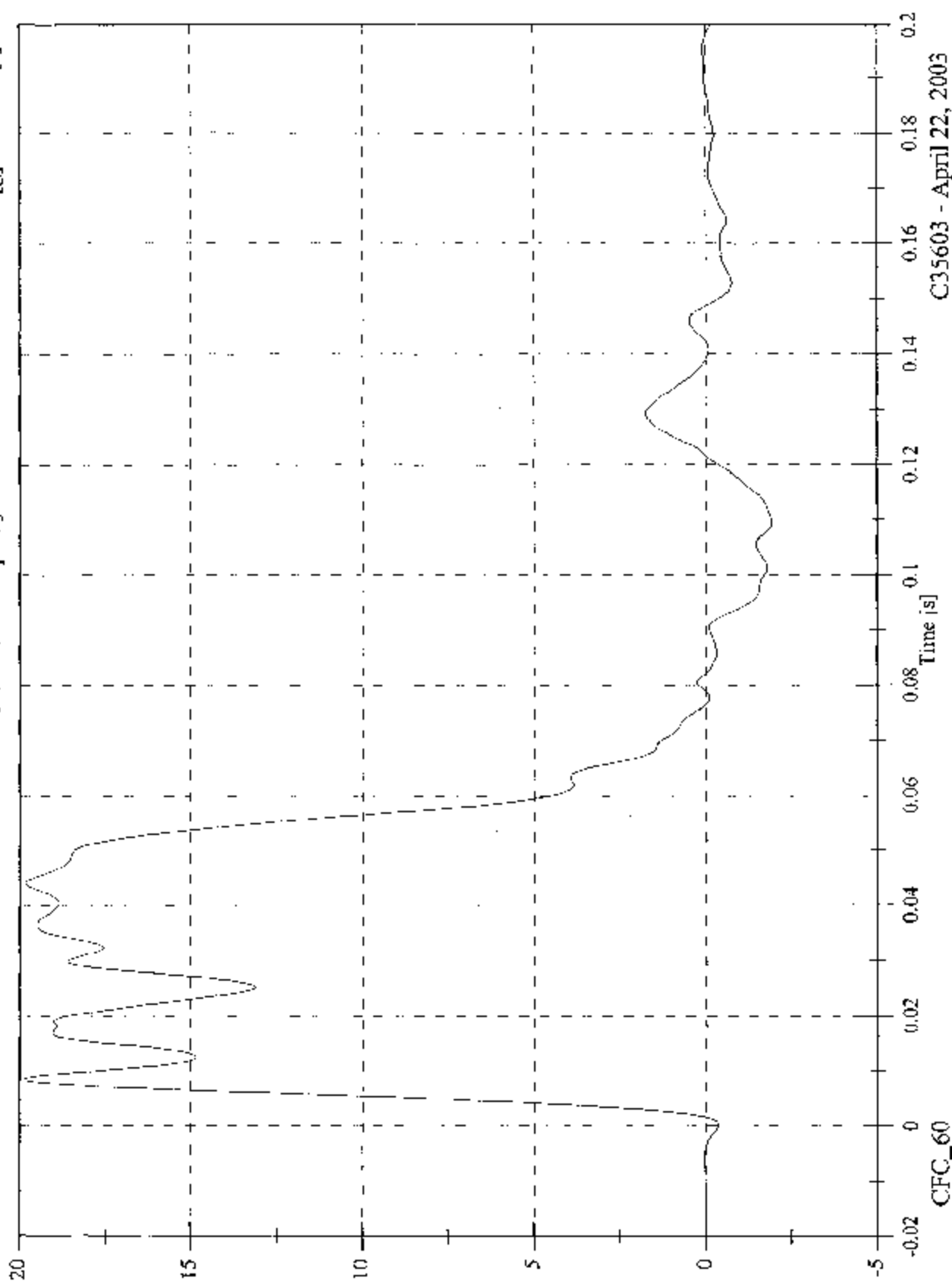
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A3 Rear Floorpan y

Max: 19.9 [g] at 0.009 [s]

Min: -1.9 [g] at 0.109 [s]



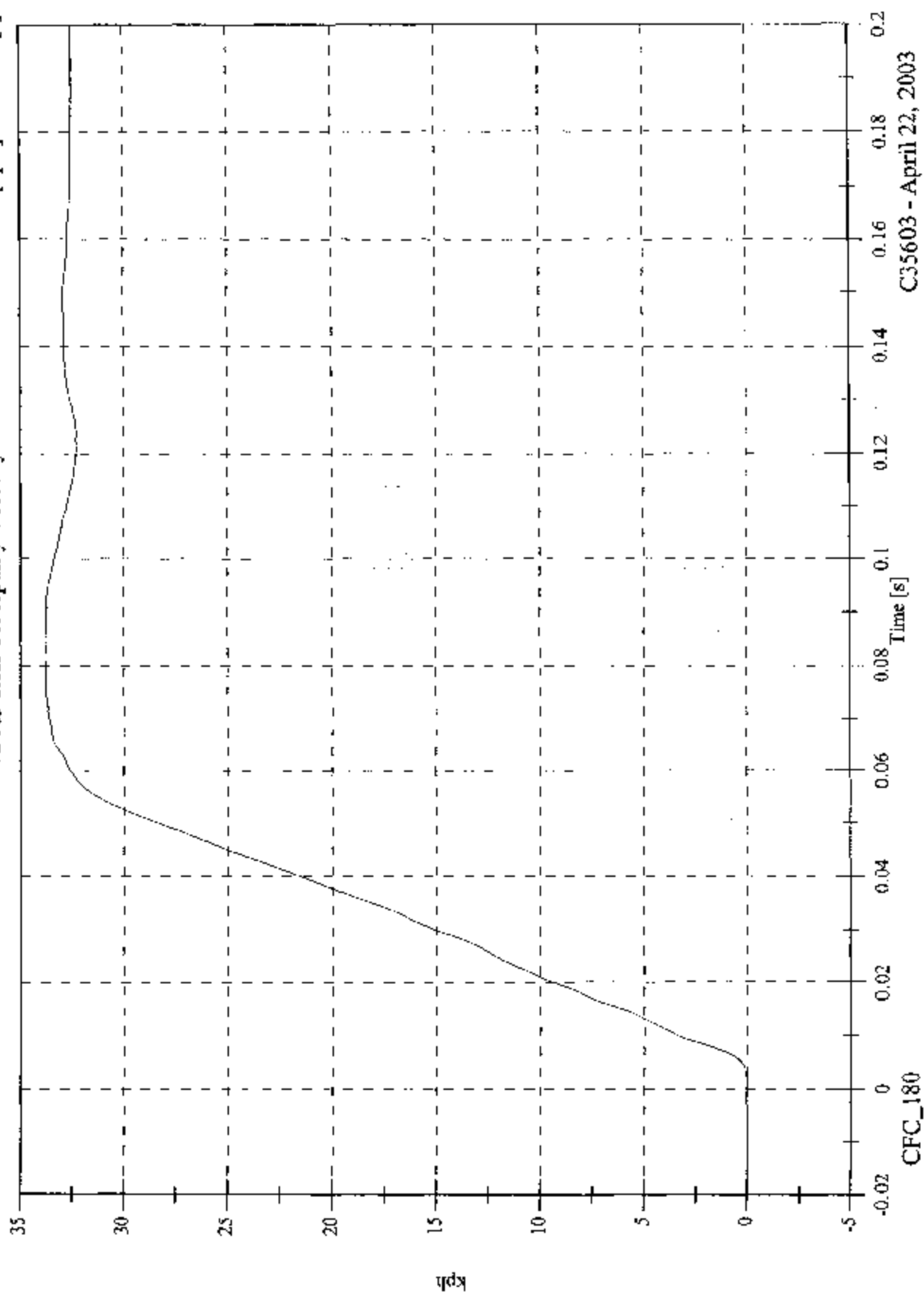
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 33.8 [kph] at 0.082 [s]

V2 A3 Rear Floorpan y Velocity

Min: -0.0 [kph] at -0.020 [s]



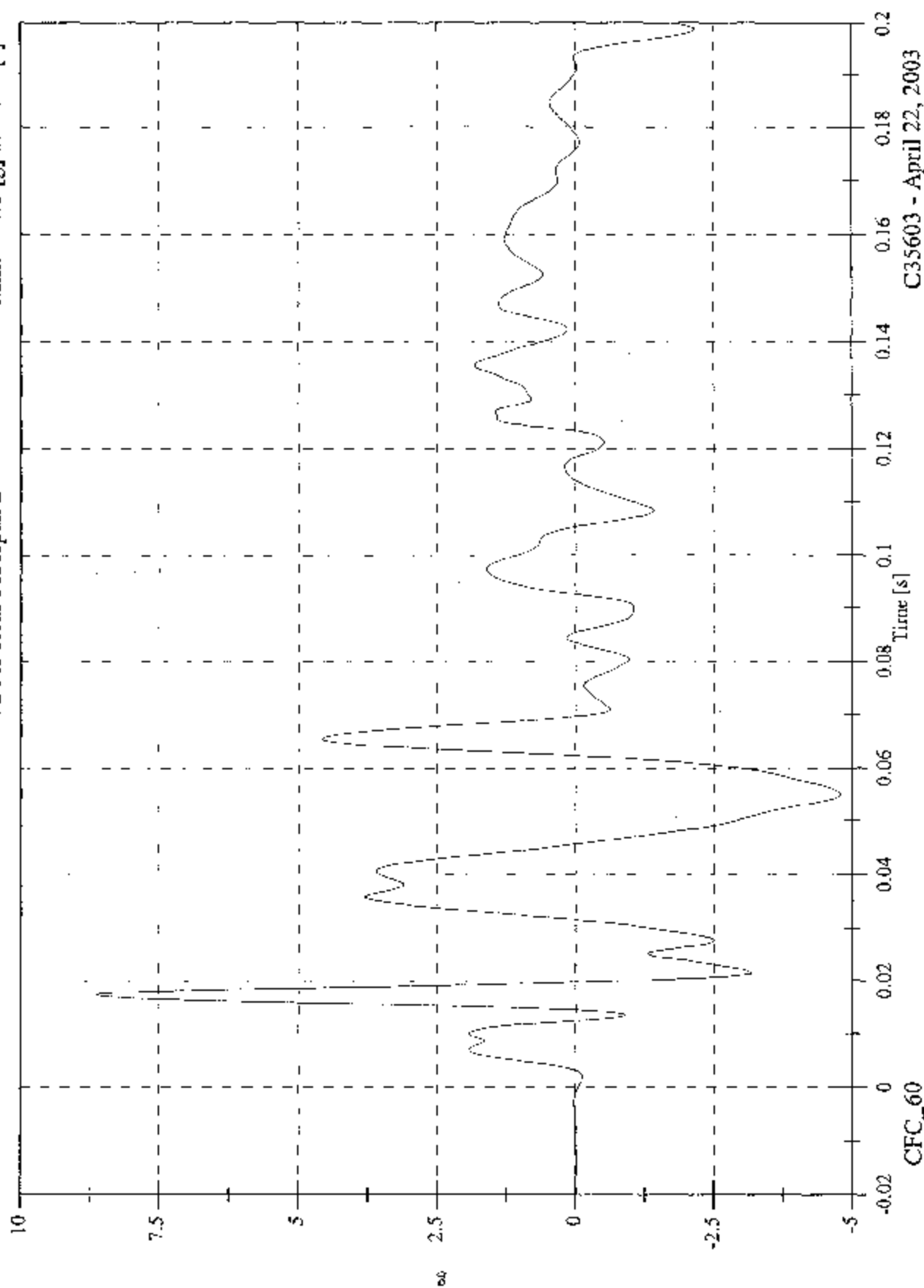
CFC_180

C35603 - April 22, 2003

TMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A3 Rear Floorpan z

Max: 8.6 [g] at 0.017 [s]
Min: -4.8 [g] at 0.055 [s]

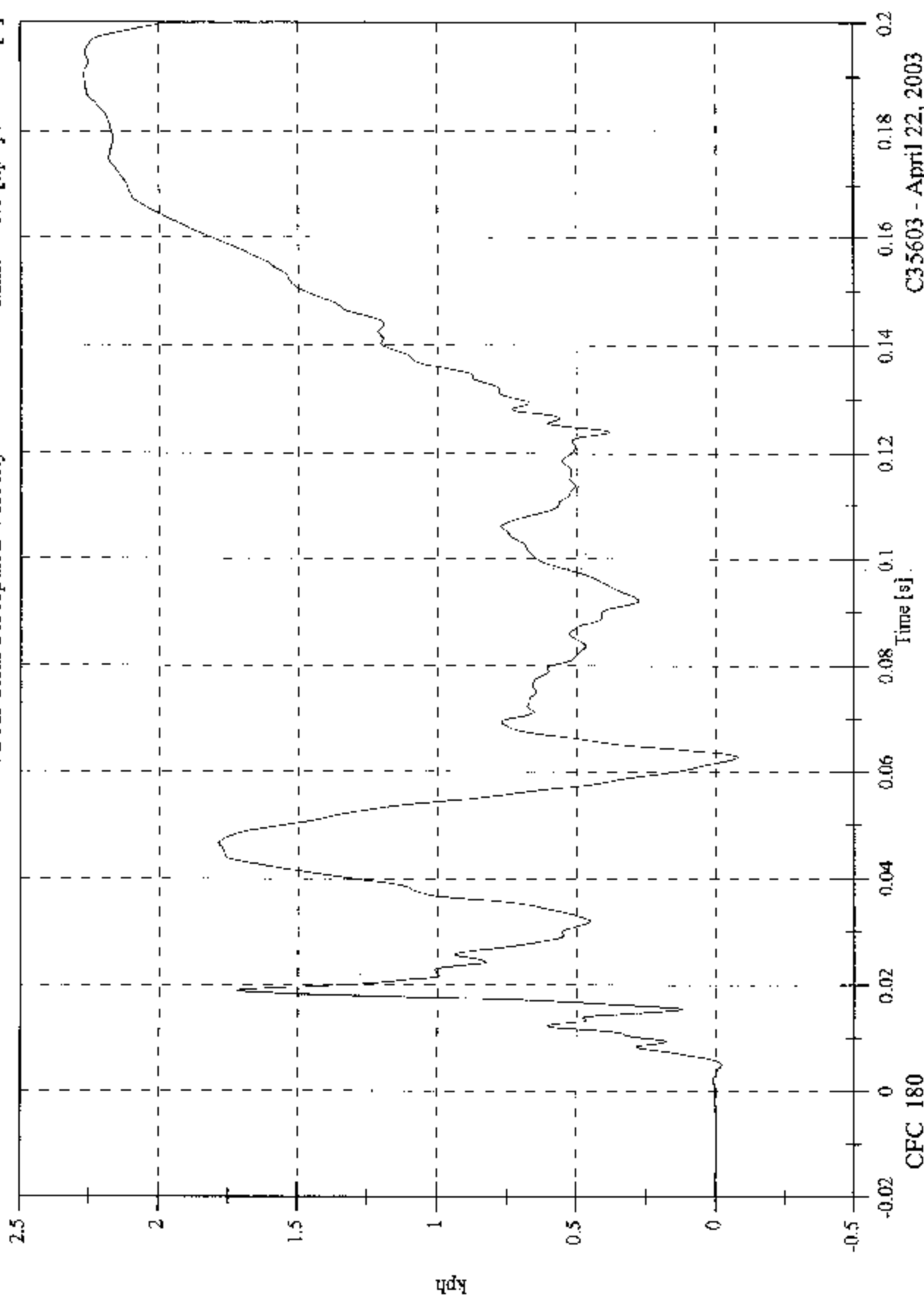


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FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A3 Rear Floorpan z Velocity

Max: 2.3 [kph] at 0.190 [s]
Min: -0.1 [kph] at 0.063 [s]

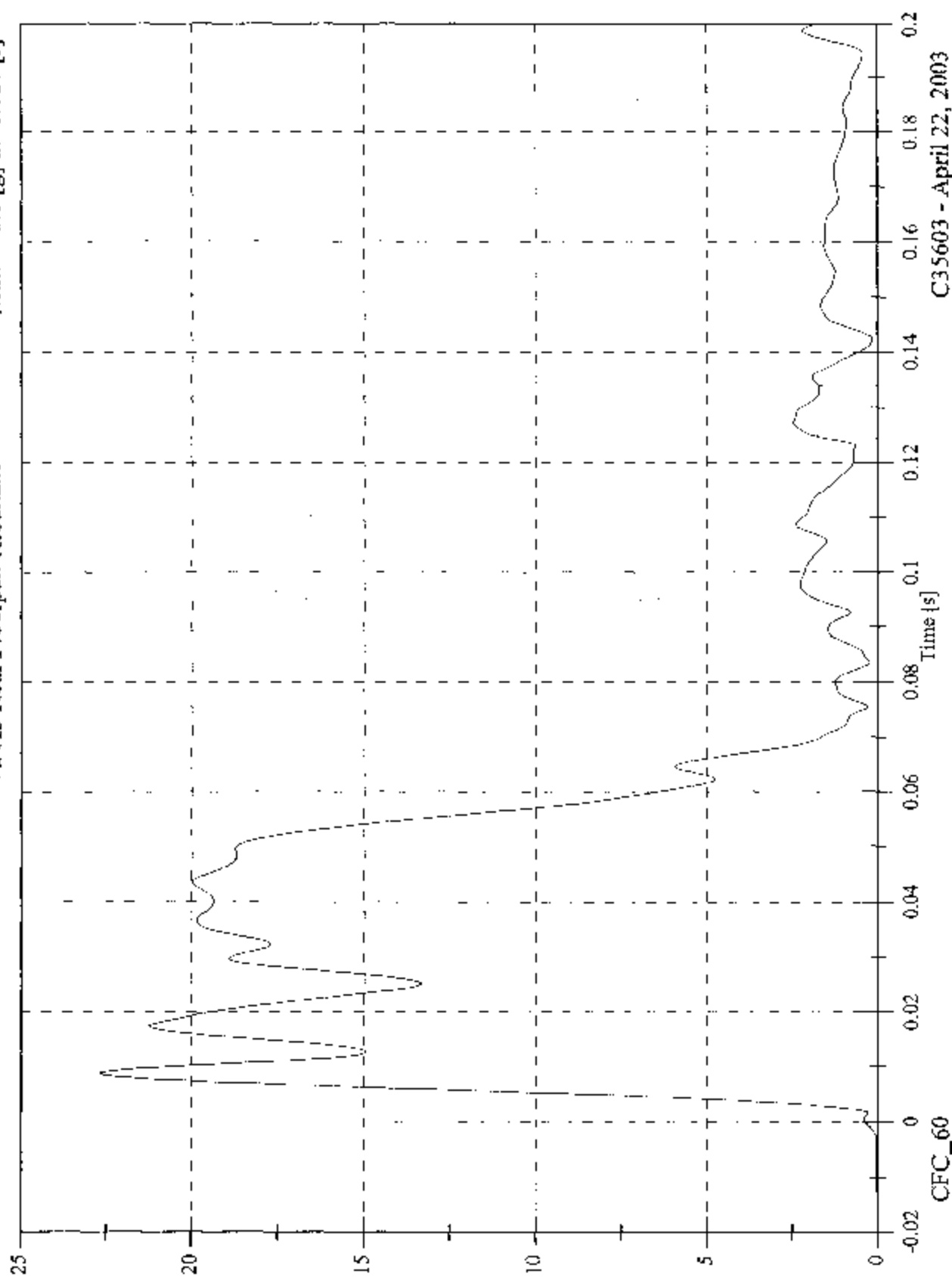


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FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A3 Rear Floorpan Resultant

Max: 22.7 [g] at 0.009 [s]
Min: 0.0 [g] at -0.017 [s]

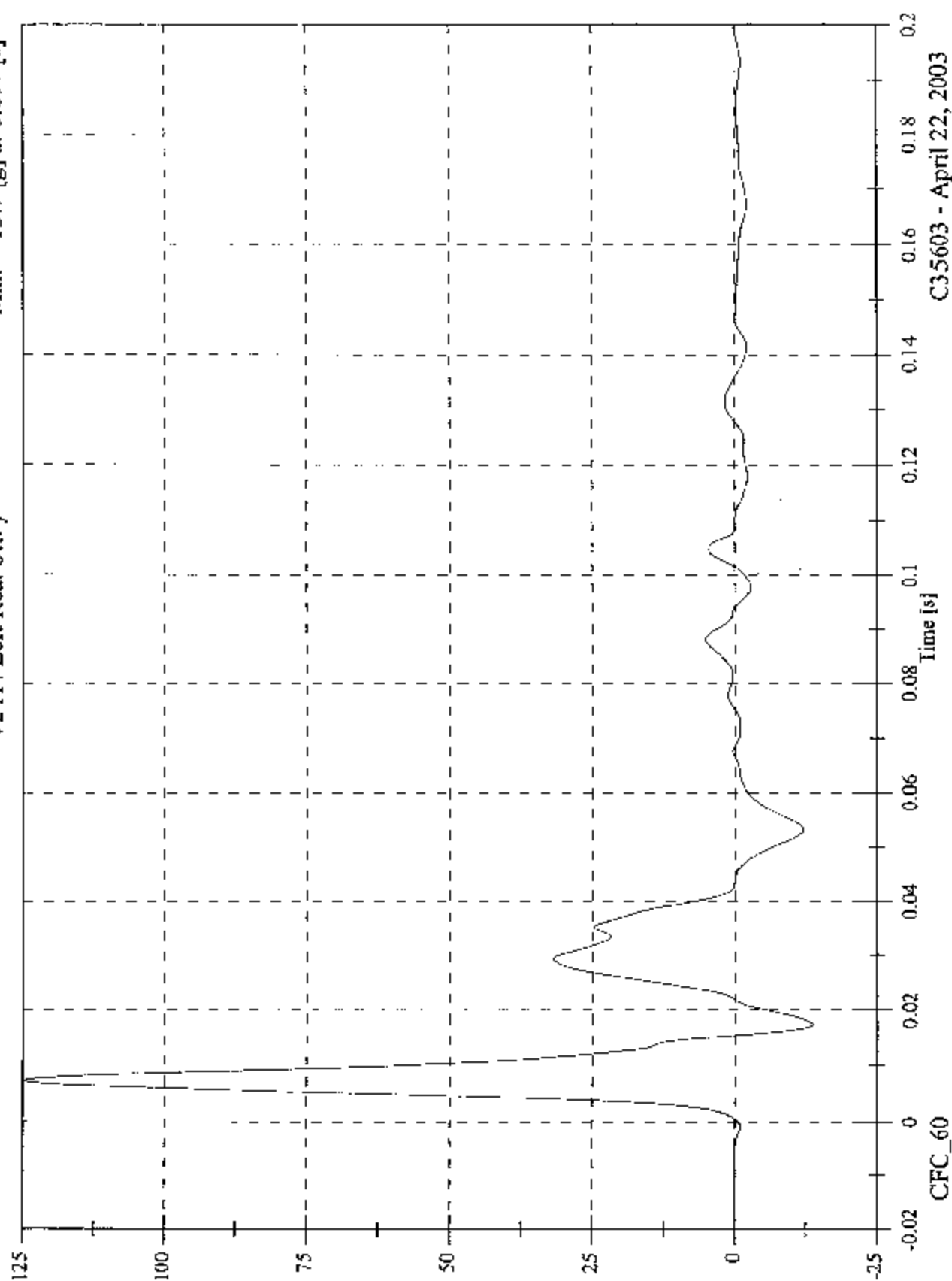


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A4 Left Rear Sill y

Max: 124.7 [g] at 0.007 [s]
Min: -13.7 [g] at 0.017 [s]



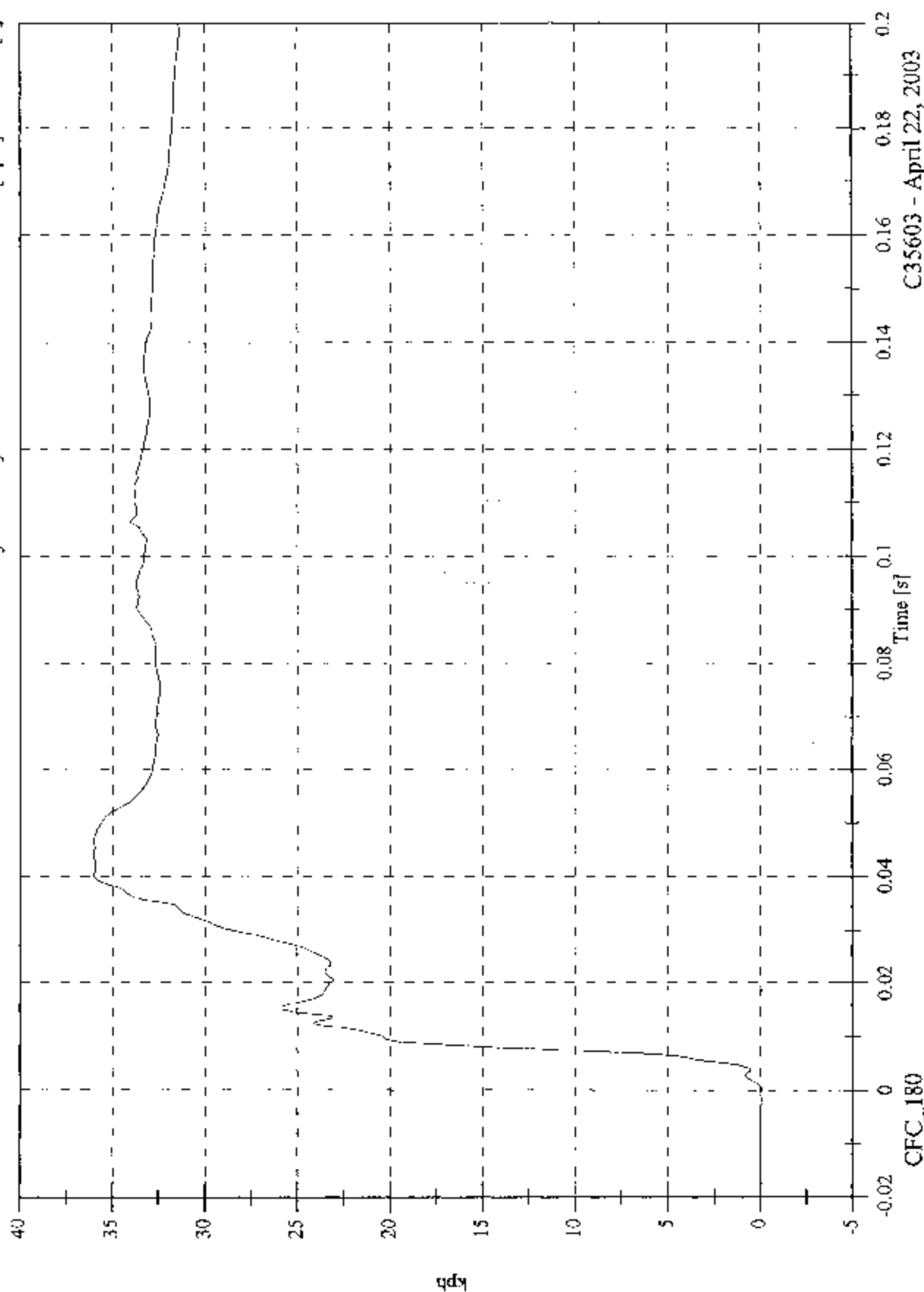
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A4 Left Rear Sill y Velocity

Max: 36.0 [kph] at 0.046 [s]

Min: -0.0 [kph] at 0.000 [s]

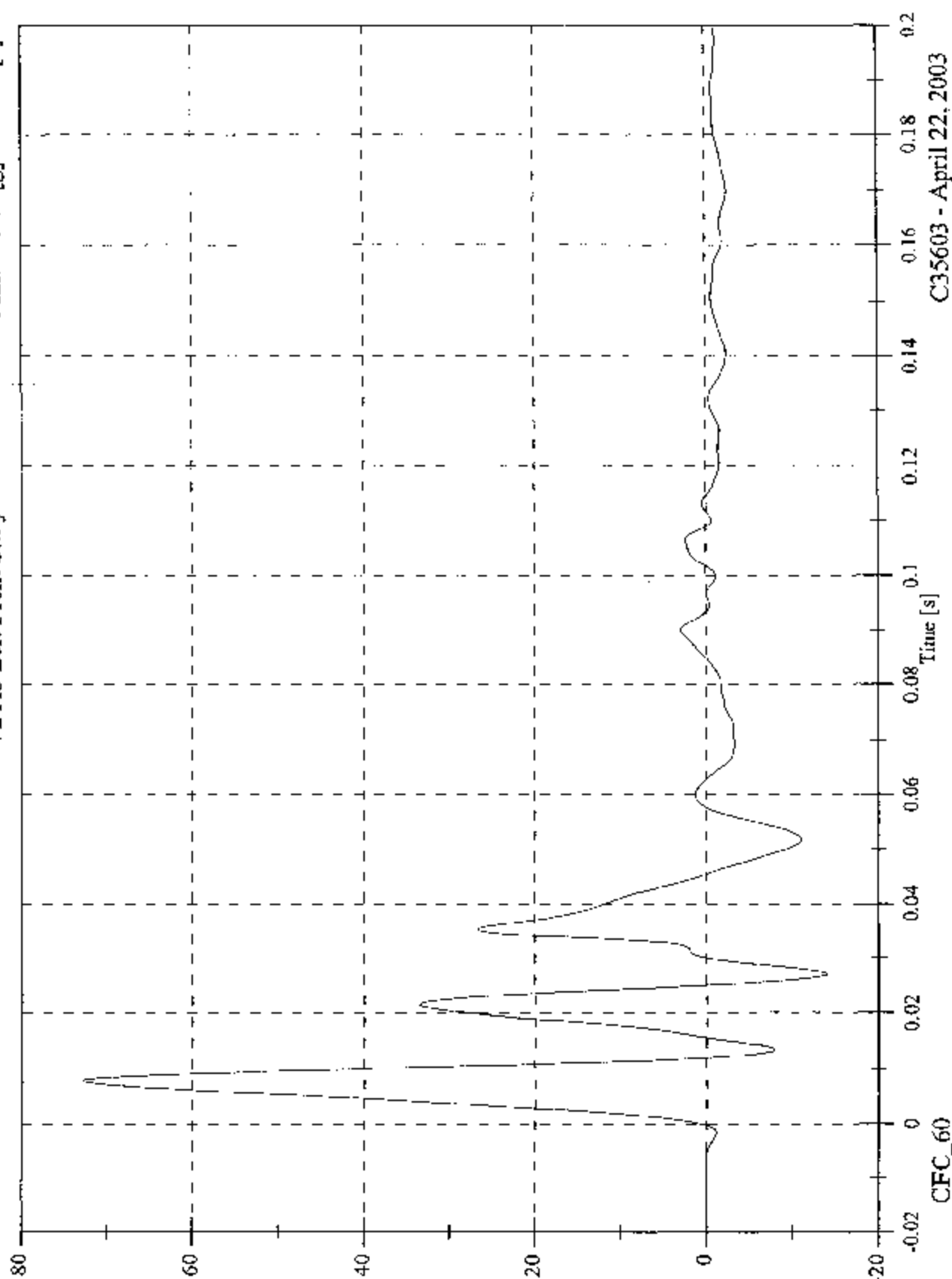


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A5 Left Front Sill y

Max: 72.8 [g] at 0.008 [s]
Min: -14.0 [g] at 0.027 [s]



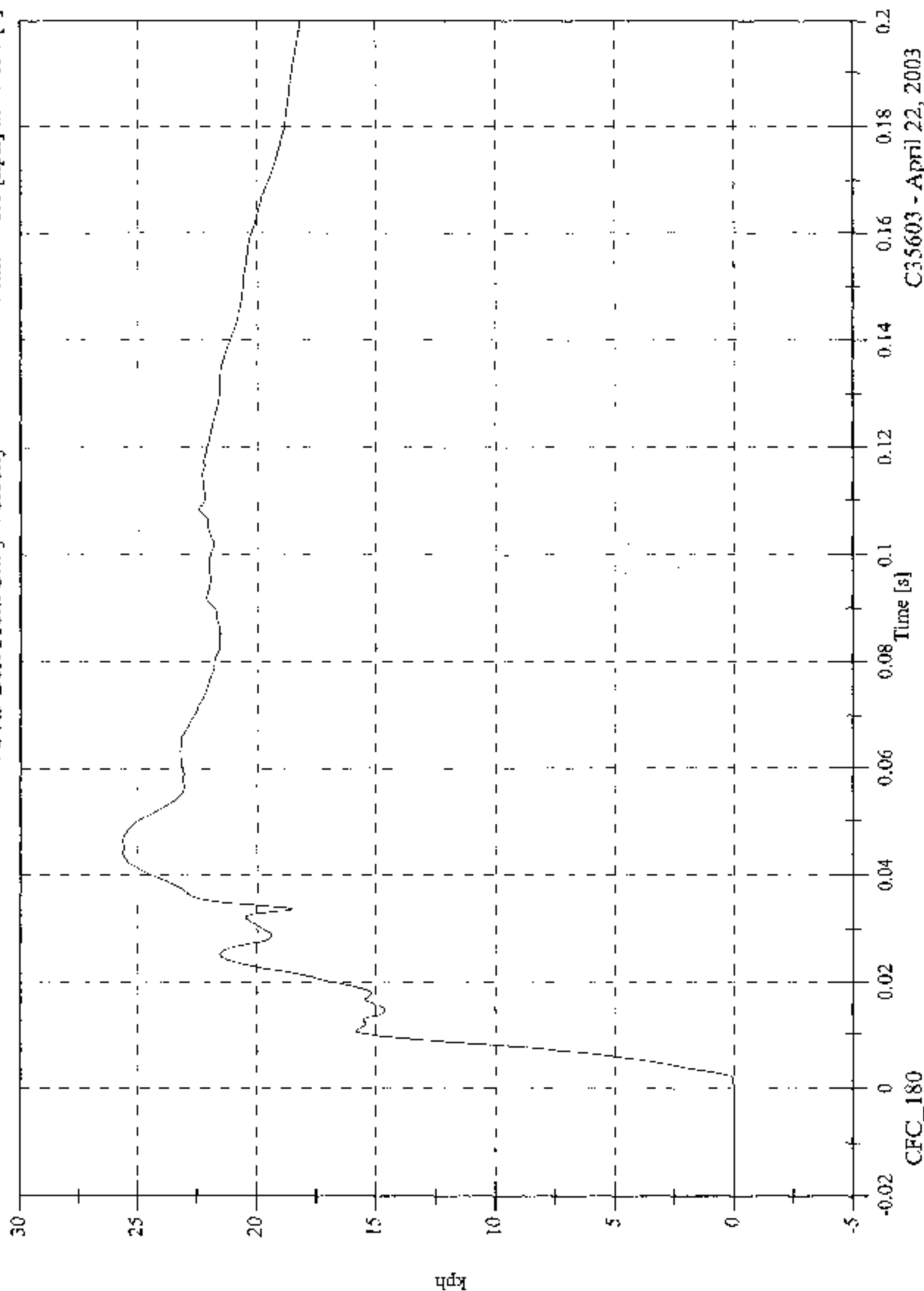
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 25.6 [kph] at 0.047 [s]

Min: -0.0 [kph] at -0.020 [s]

V2 A5 Left Front Sill y Velocity

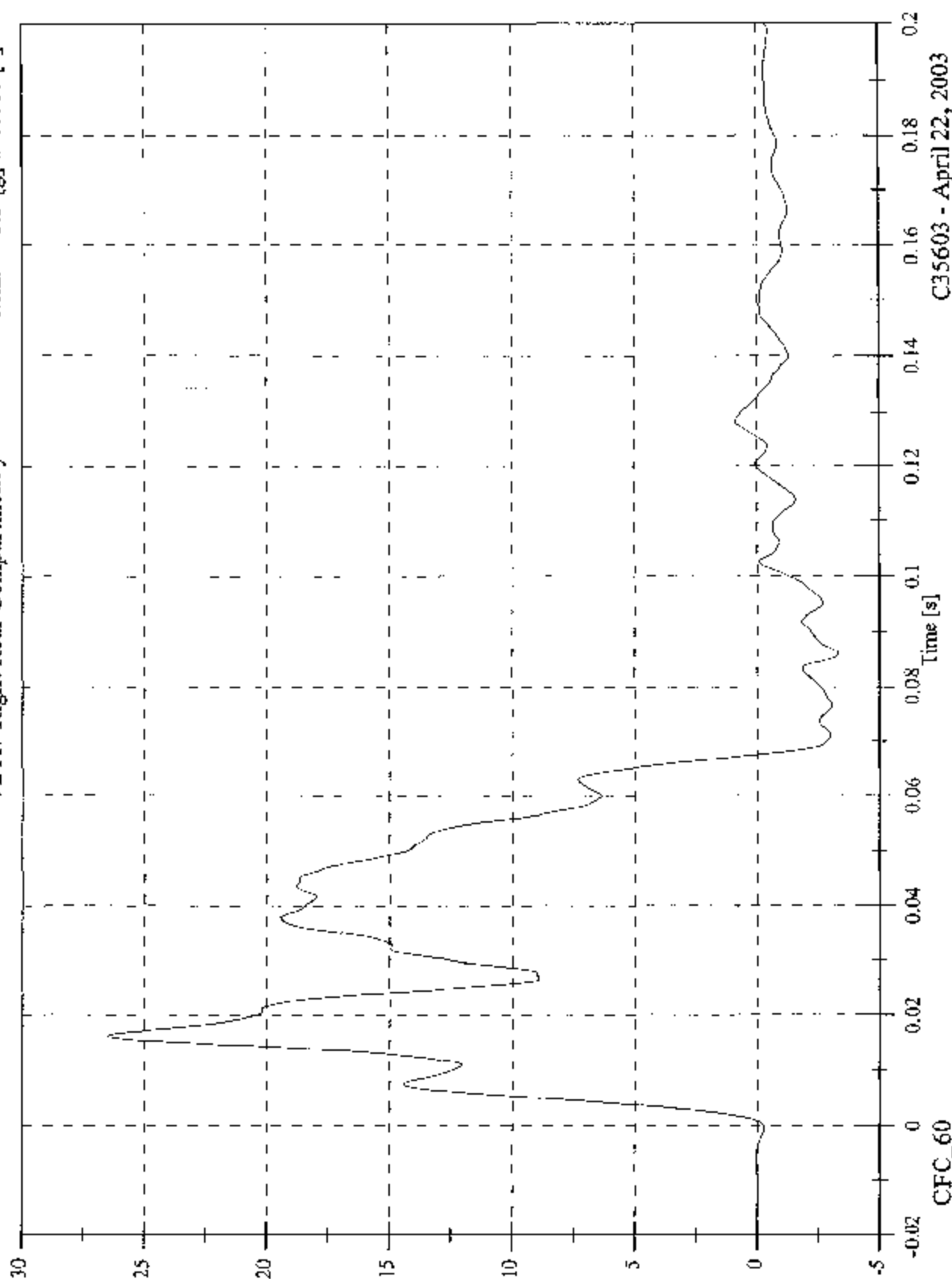


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A7 Right Rear Compartment y

Max: 26.5 [g] at 0.016 [s]
Min: -3.3 [g] at 0.086 [s]

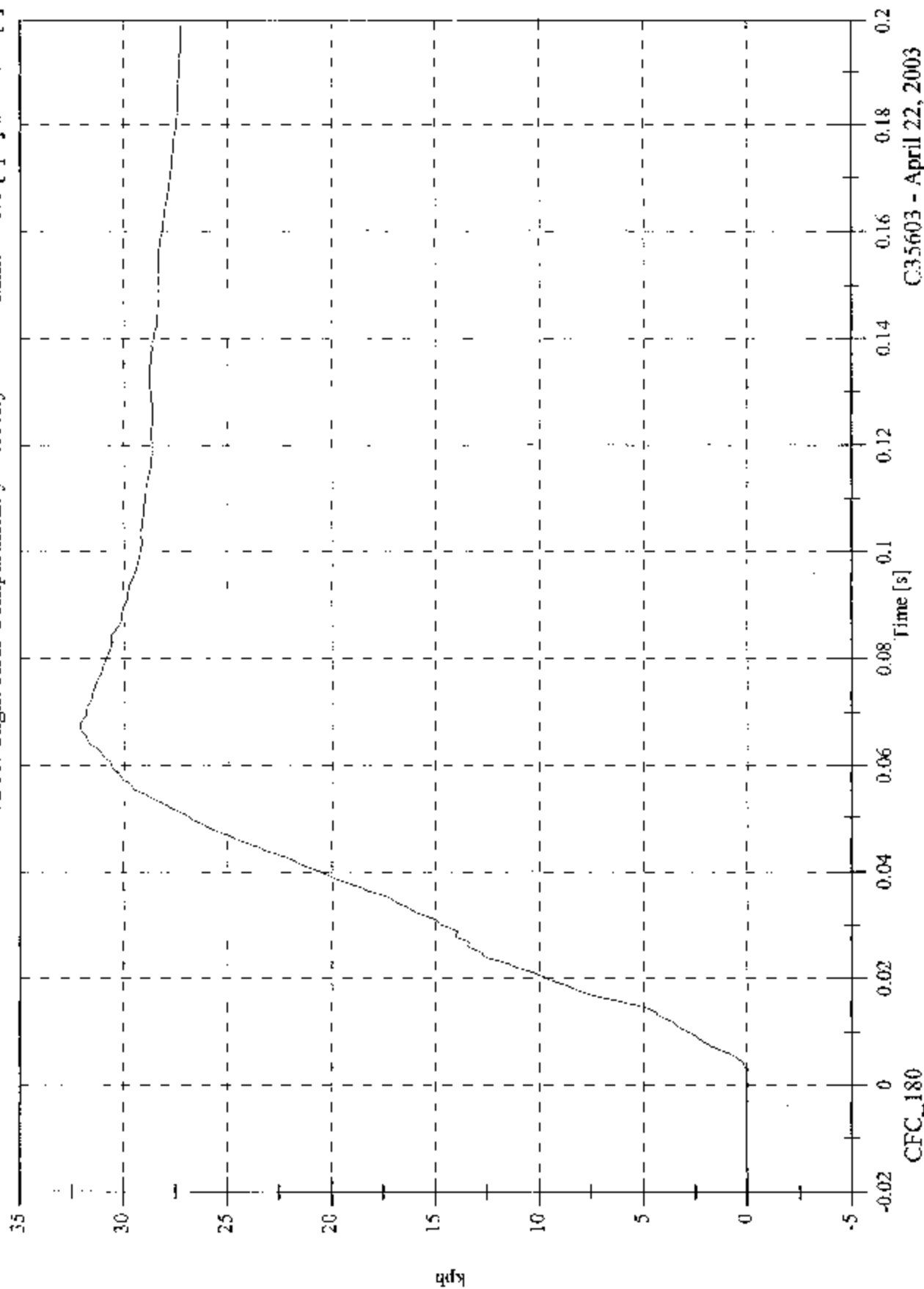


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A7 Right Rear Compartment y Velocity

Max: 32.1 [kph] at 0.067 [s]
Min: -0.0 [kph] at -0.019 [s]



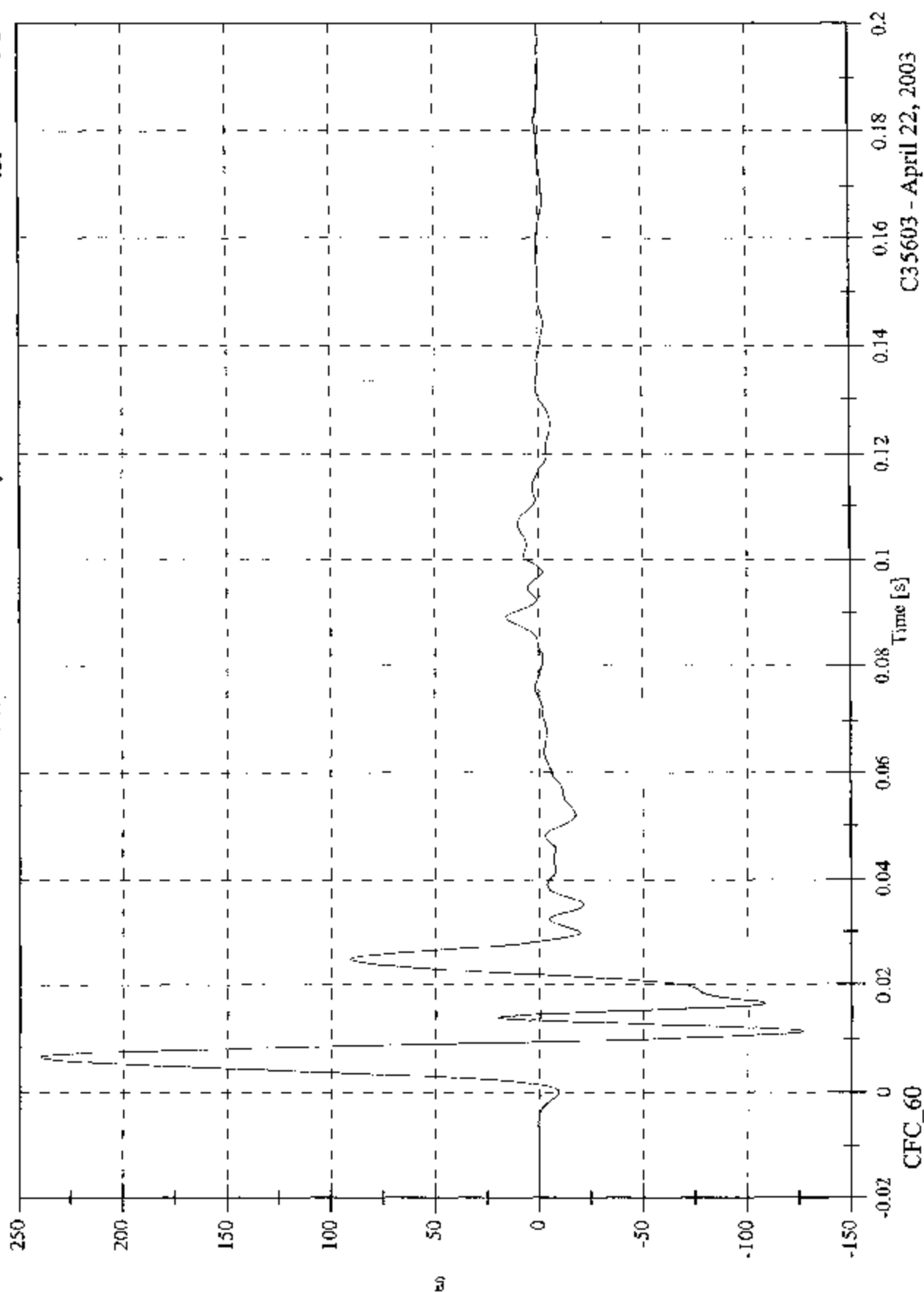
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A12 Left Lower B Post y

Max: 240.0 [g] at 0.006 [s]

Min: -126.9 [g] at 0.011 [s]

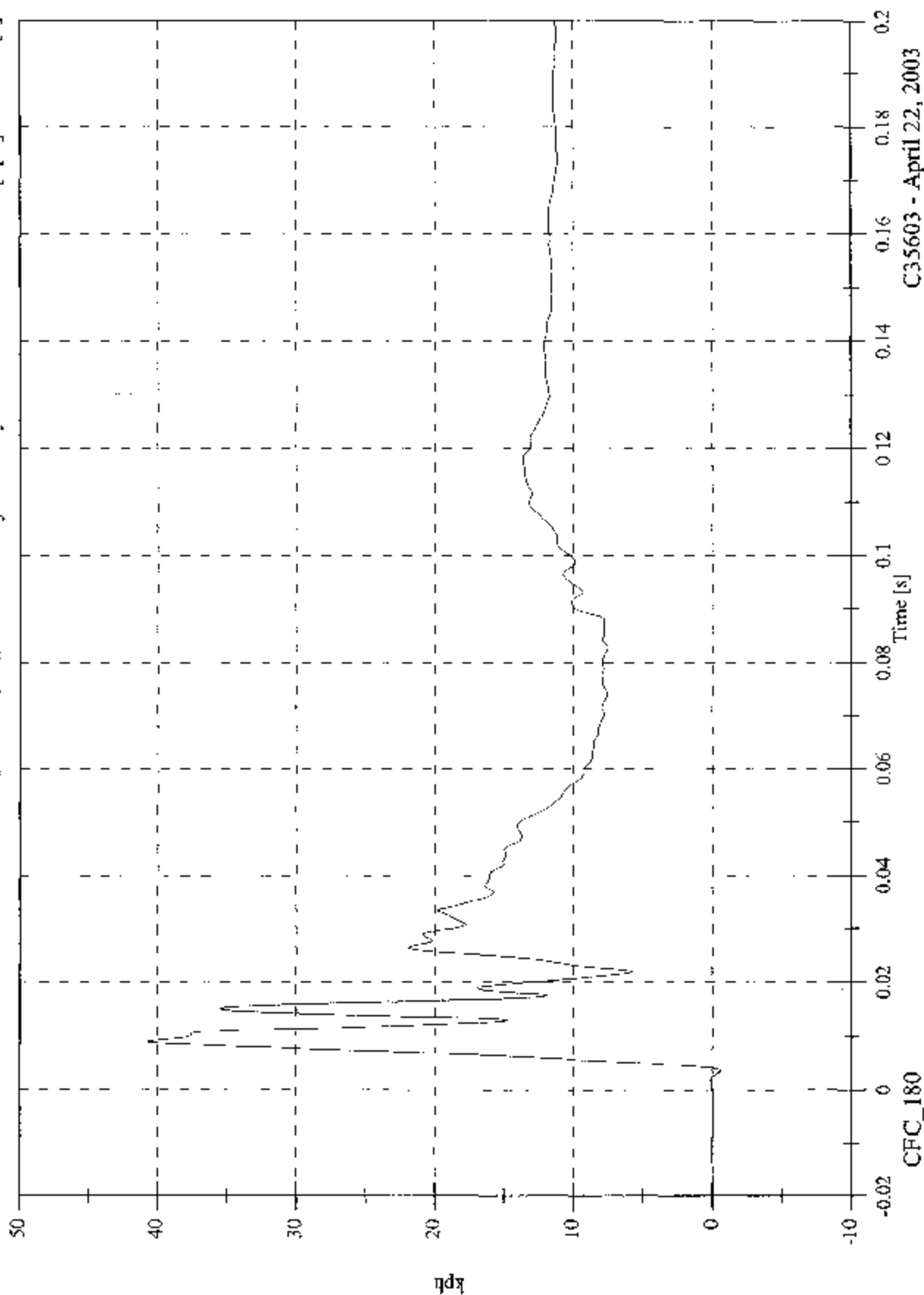


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 40.9 [kph] at 0.009 [s]
 Min: -0.6 [kph] at 0.003 [s]

V2 A12 Left Lower B Post y Velocity



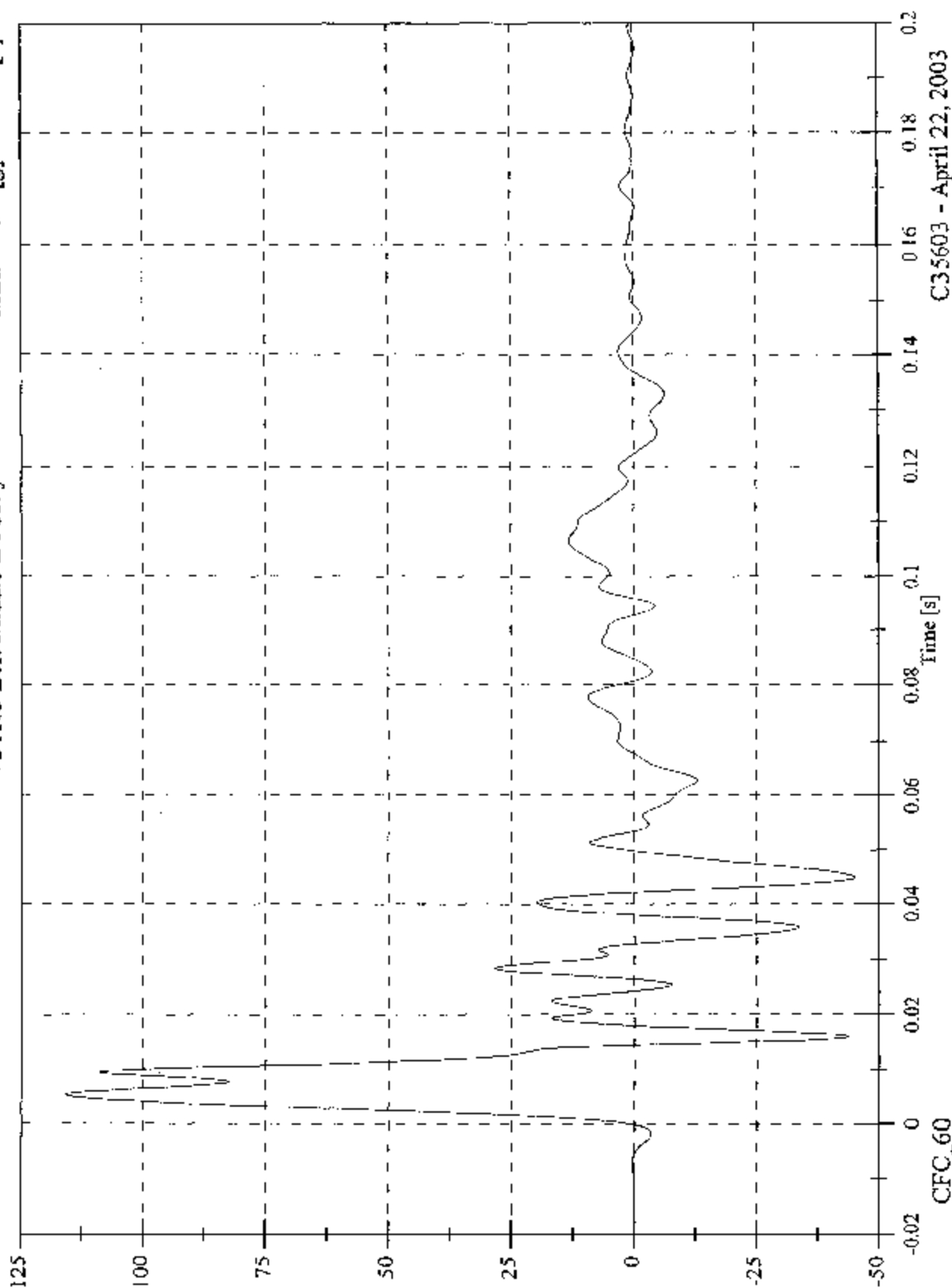
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A13 Left Middle B Post y

Max: 116.0 [g] at 0.005 [s]
Min: -45.1 [g] at 0.045 [s]

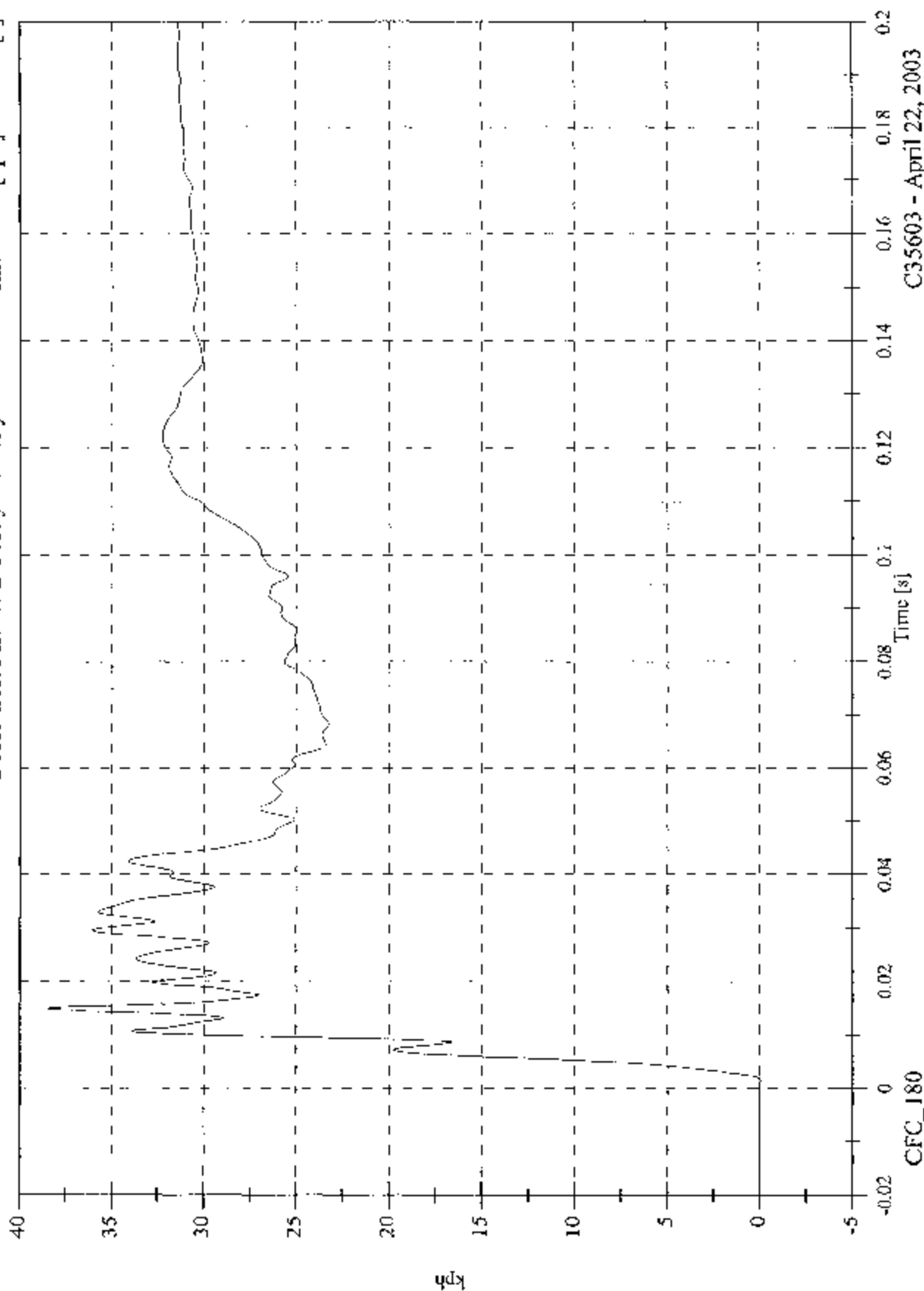


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A13 Left Middle B Post y Velocity

Max: 38.5 [kph] at 0.015 [s]
Min: -0.0 [kph] at 0.001 [s]

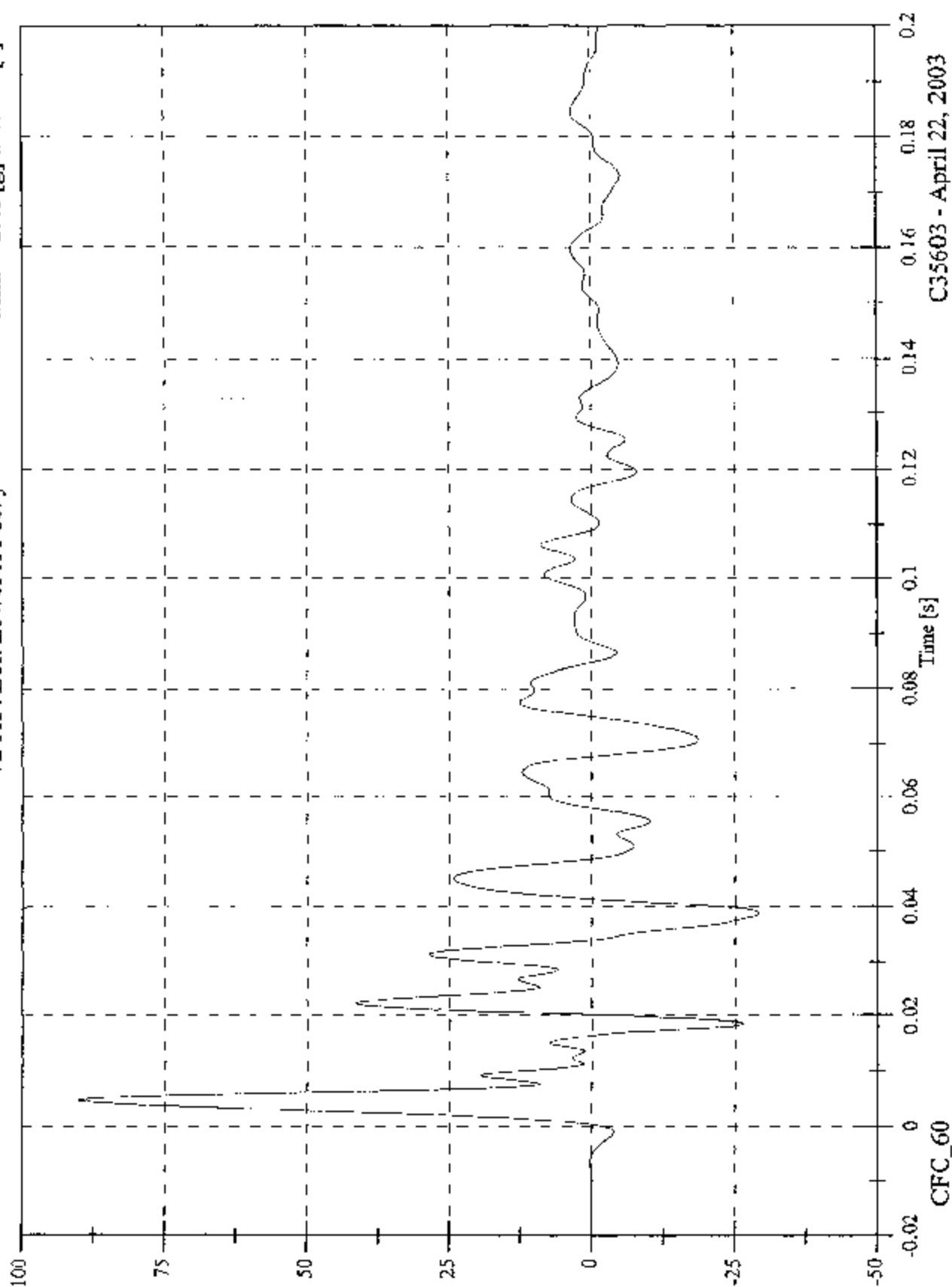


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A14 Left Lower A Post y

Max: 90.2 [g] at 0.005 [s]
Min: -29.1 [g] at 0.039 [s]

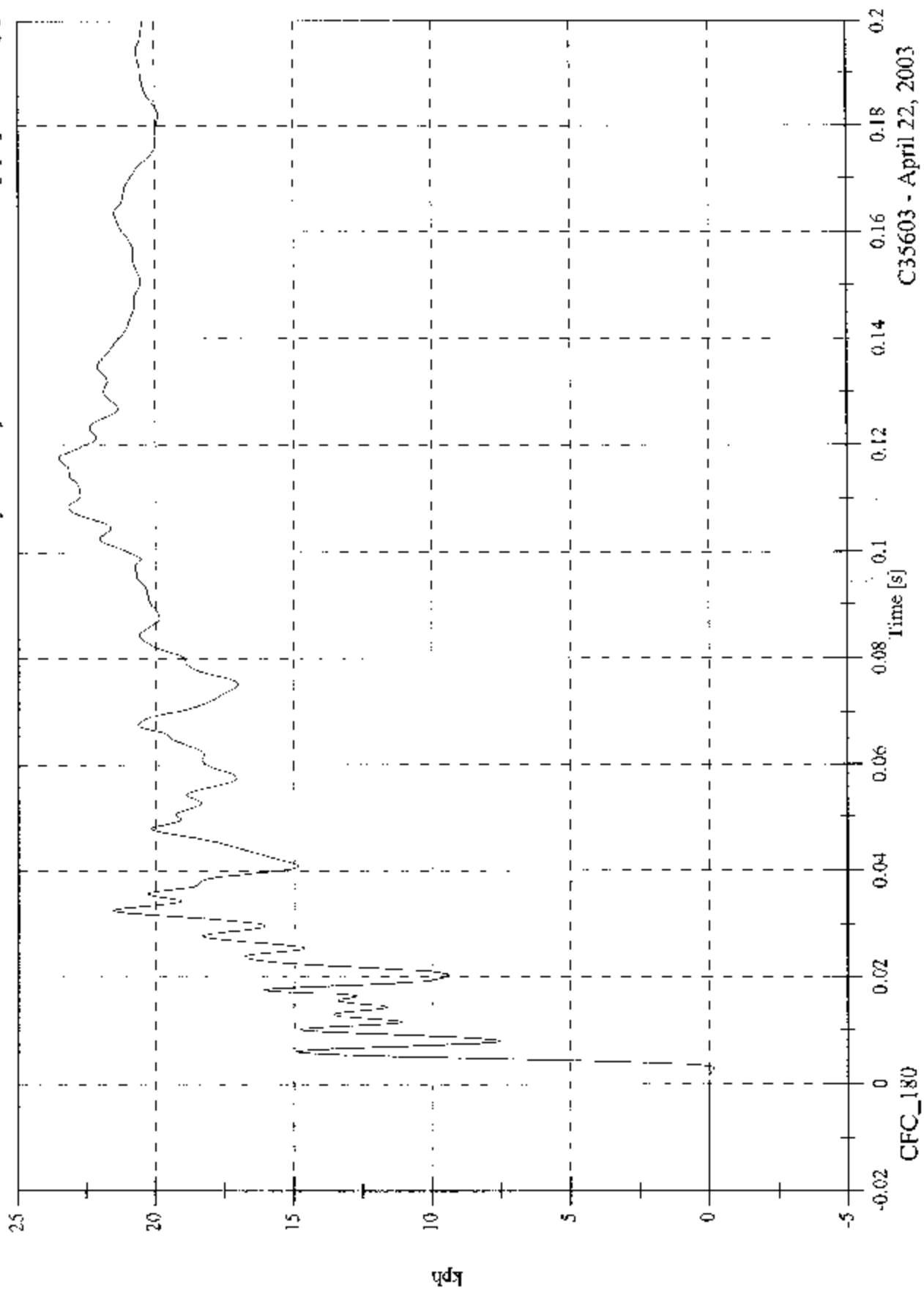


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 23.5 [kph] at 0.118 [s]
Min: -0.2 [kph] at 0.003 [s]

V2 A14 Left Lower A Post y Velocity



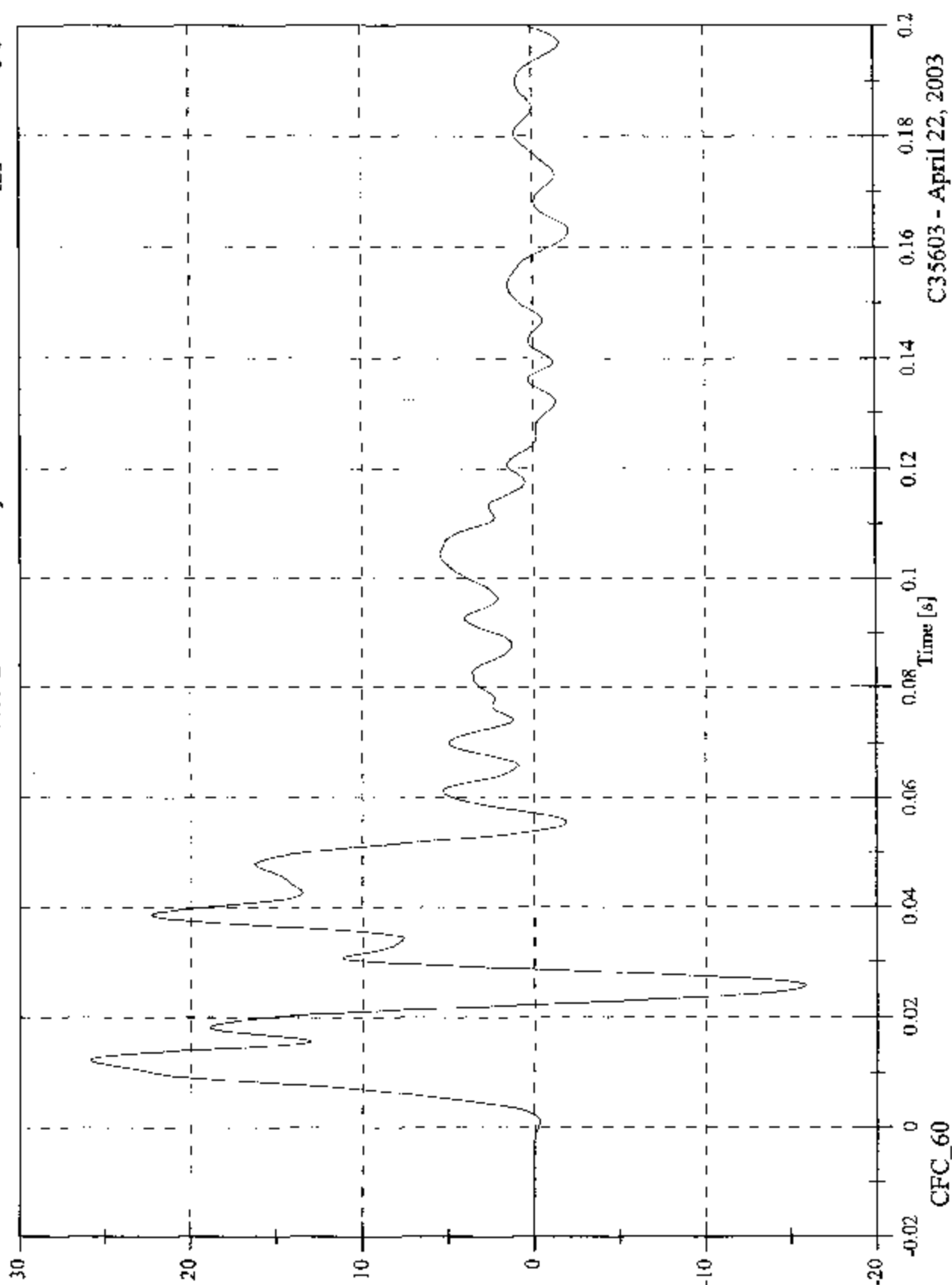
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A15 Left Mid A Post y

Max: 25.8 [g] at 0.012 [s]
Min: -15.9 [g] at 0.026 [s]

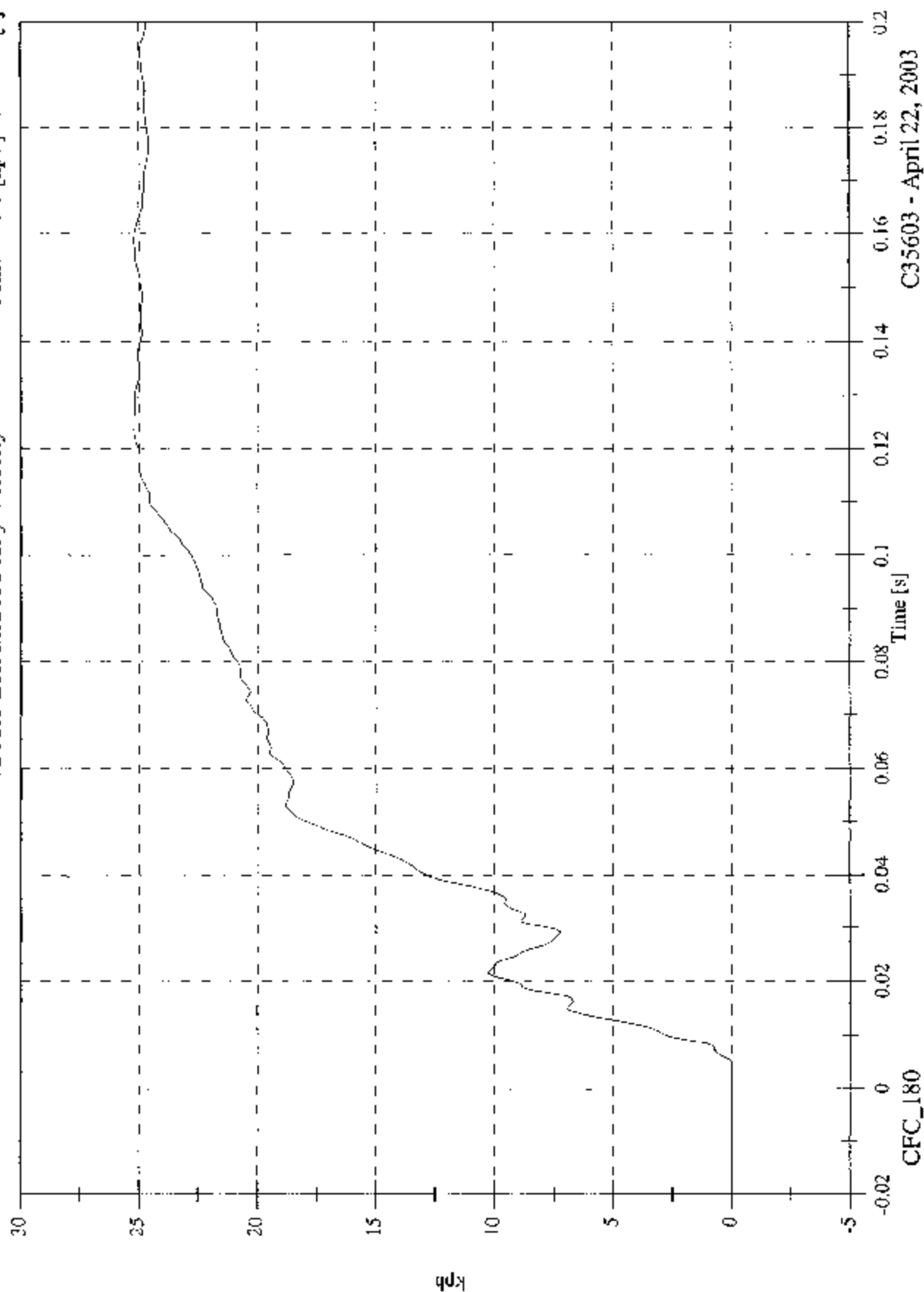


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A15 Left Mid A Post y Velocity

Max: 25.2 [kph] at 0.159 [s]
Min: -0.0 [kph] at -0.020 [s]



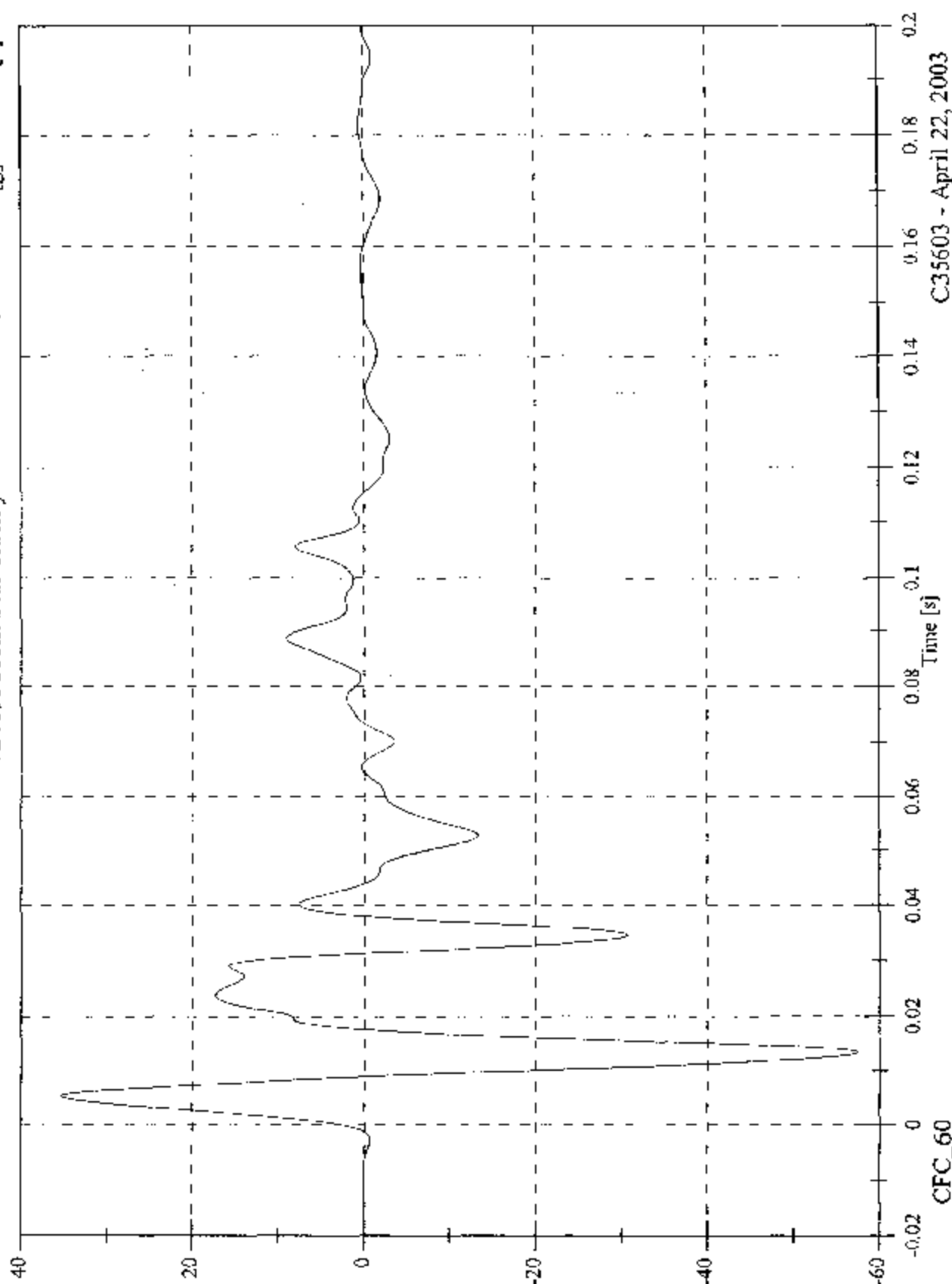
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A16 Front Seat Track y

Max: 35.3 [g] at 0.005 [s]
Min: -57.5 [g] at 0.013 [s]

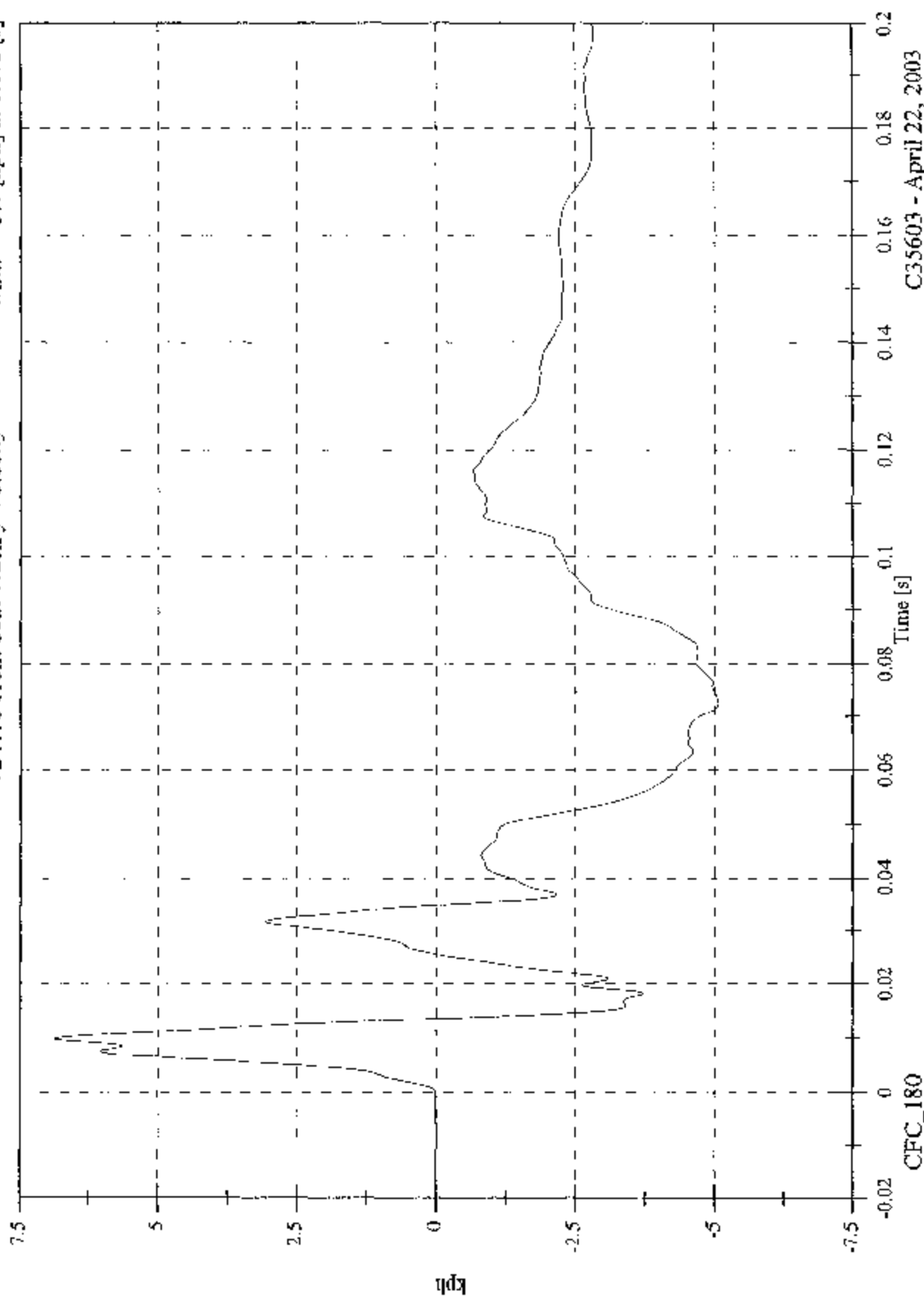


FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A16 Front Seat Track y Velocity

Max: 6.9 [kph] at 0.010 [s]

Min: -5.1 [kph] at 0.072 [s]



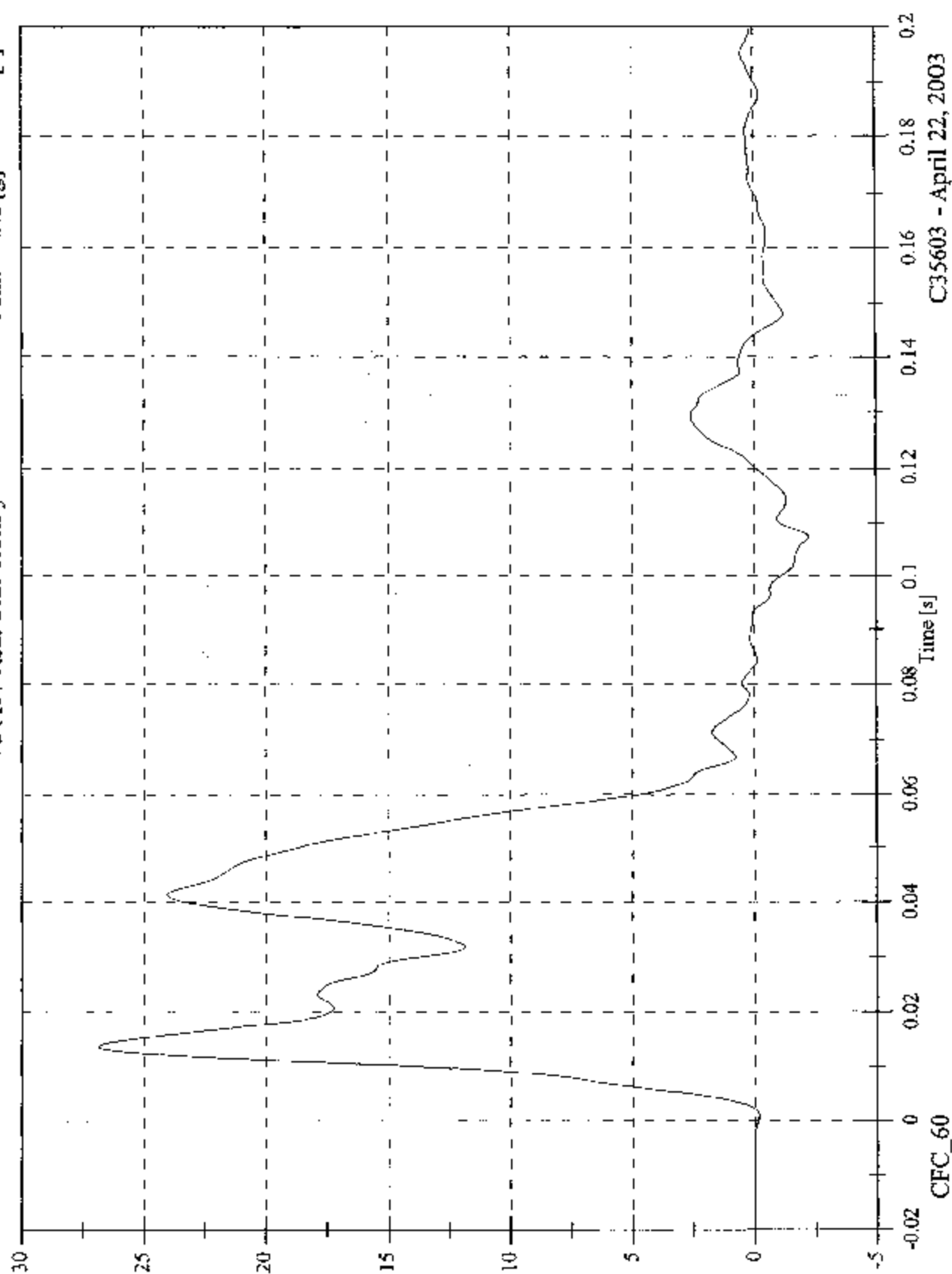
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A17 Rear Seat Track y

Max: 26.9 [g] at 0.014 [s]
Min: -2.2 [g] at 0.107 [s]

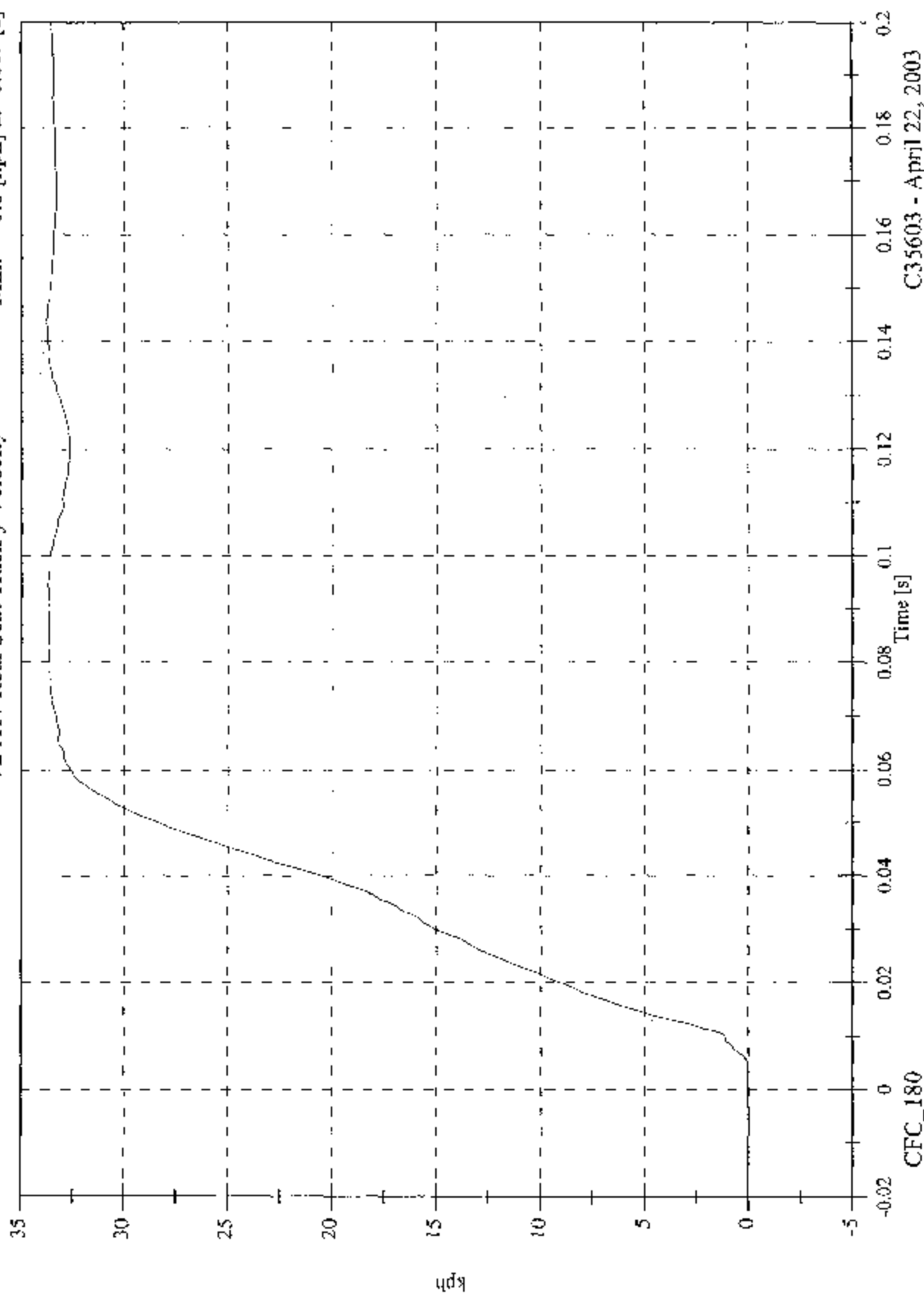


FMVSS 214D Inducant - 2003 Mitsubishi Outlander

Max: 33.8 [kph] at 0.144 [s]

Min: -0.0 [kph] at -0.019 [s]

V2 A17 Rear Seat Track y Velocity



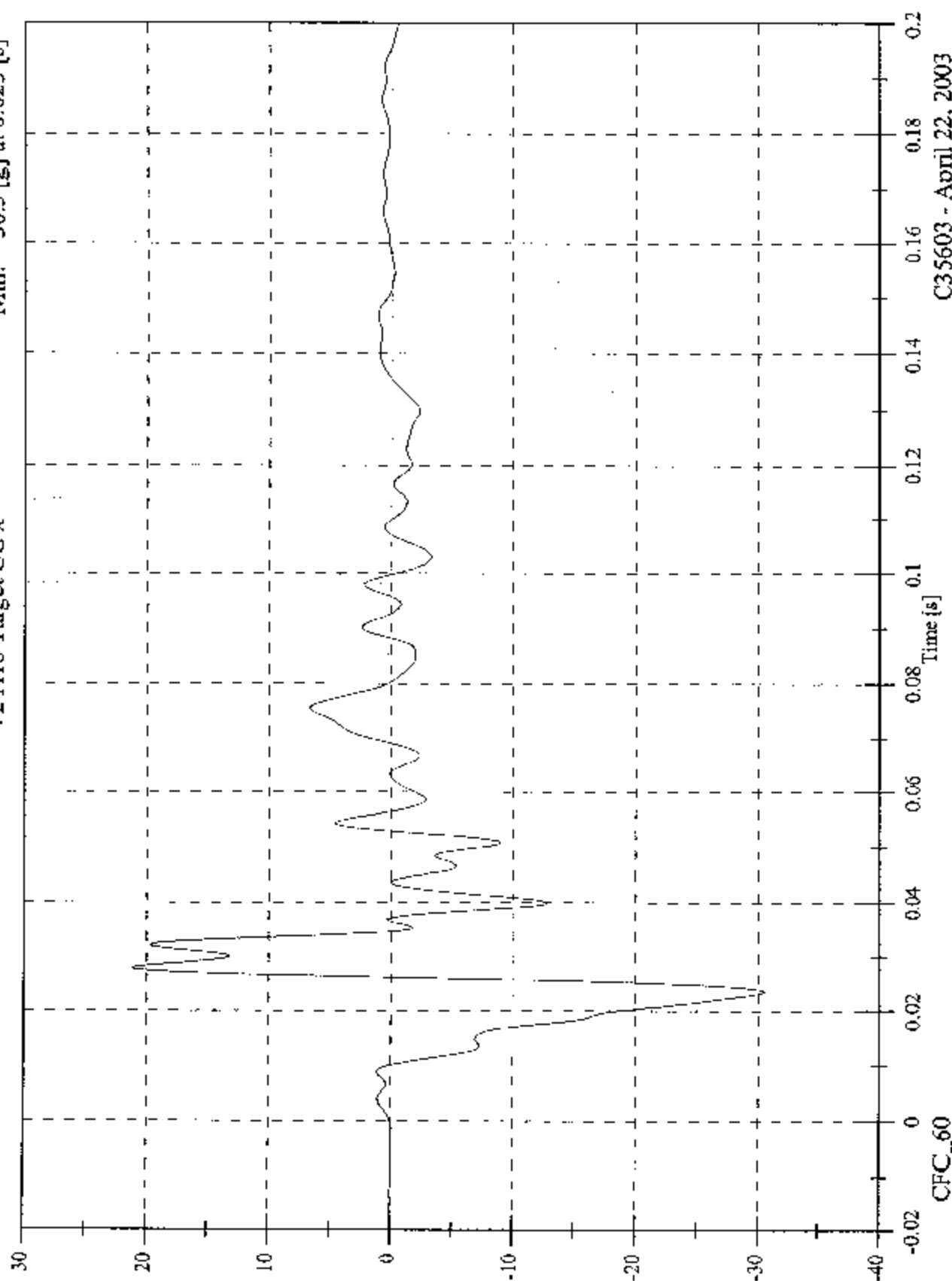
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A18 Target CG x

Max: 21.2 [g] at 0.028 [s]
Min: -30.5 [g] at 0.023 [s]

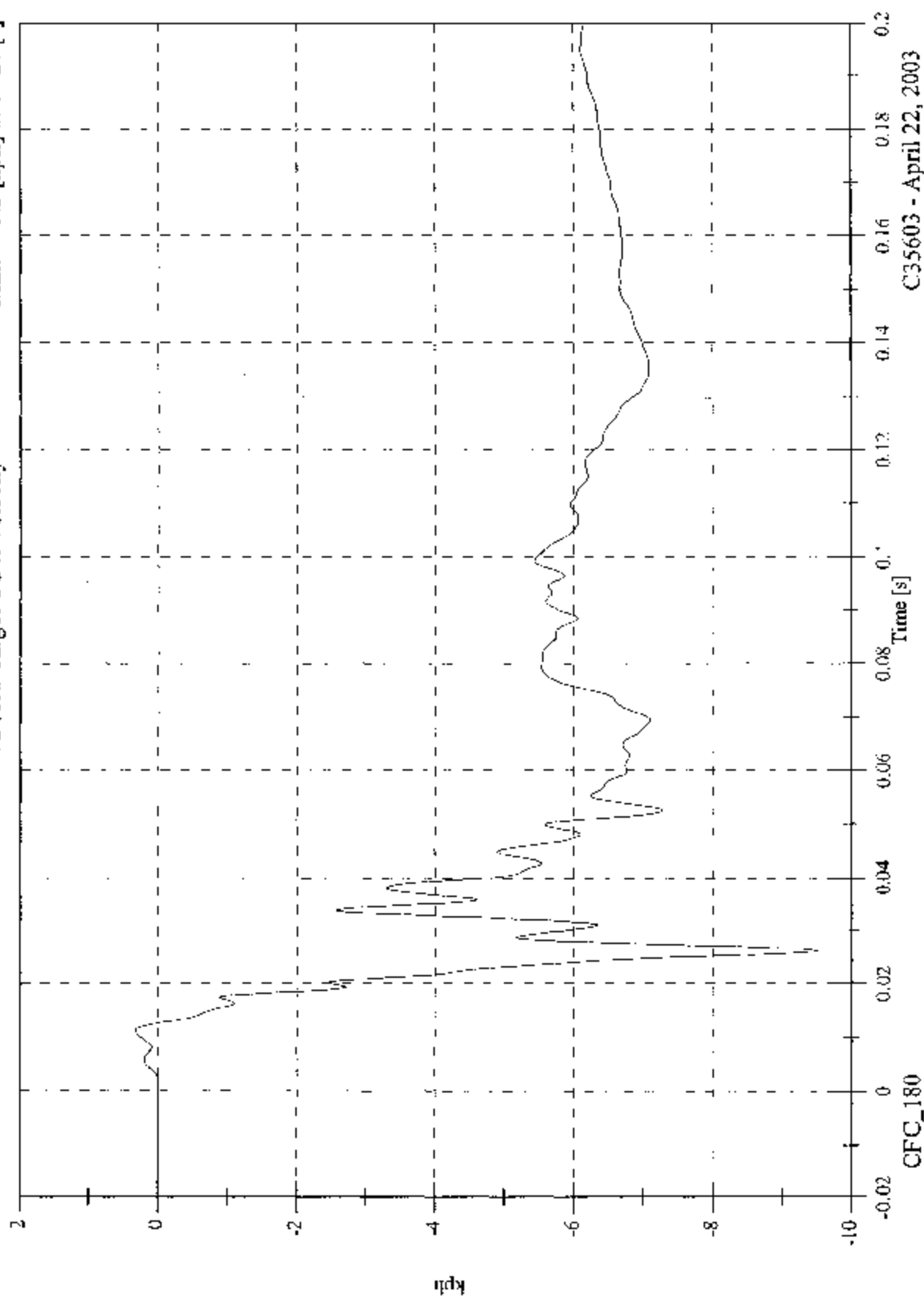


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A18 Target CG x Velocity

Max: 0.3 [kph] at 0.011 [s]
Min: -9.5 [kph] at 0.026 [s]

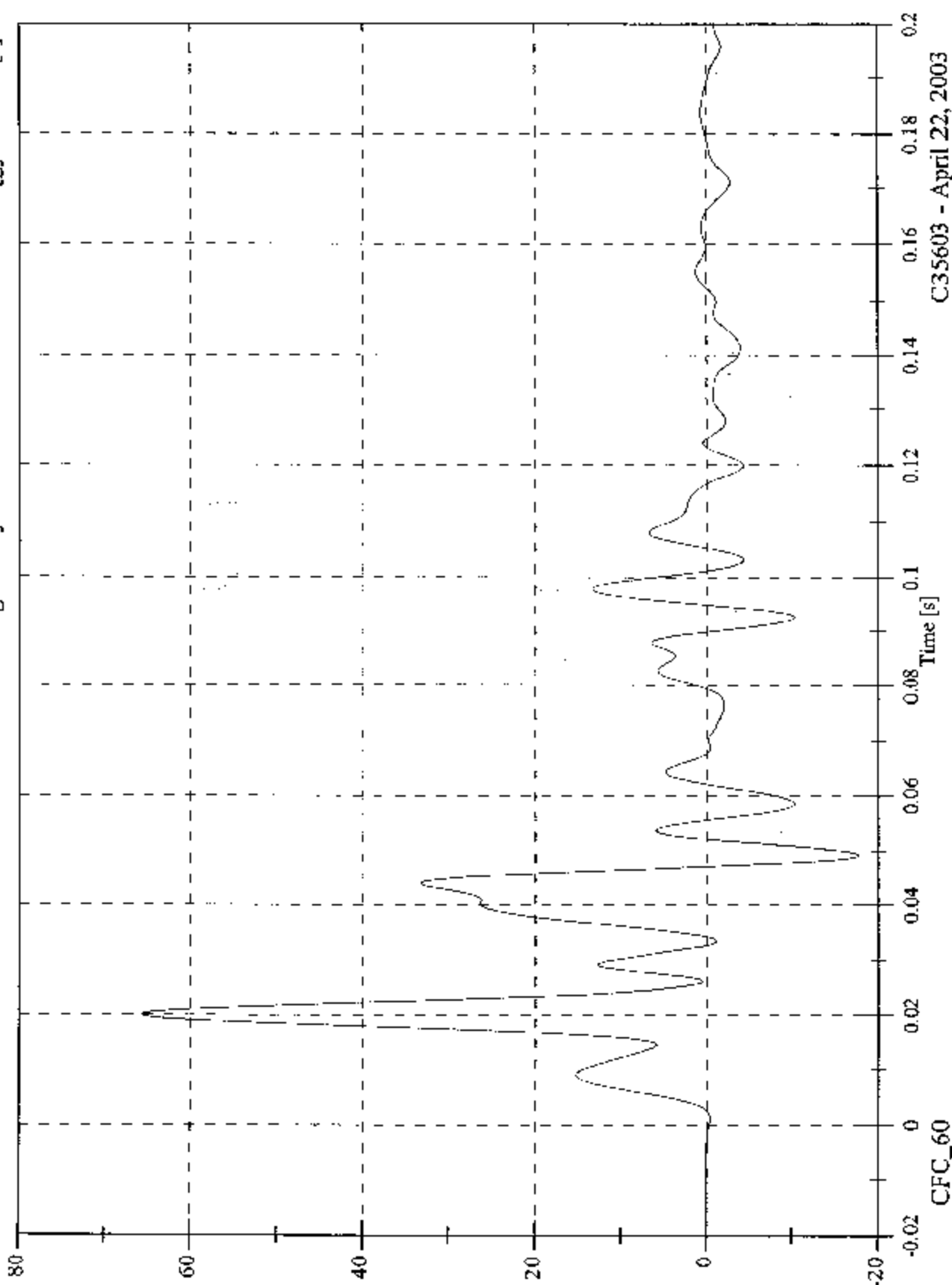


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A18 Target CG y

Max: 65.8 [g] at 0.020 [s]
Min: -17.7 [g] at 0.049 [s]



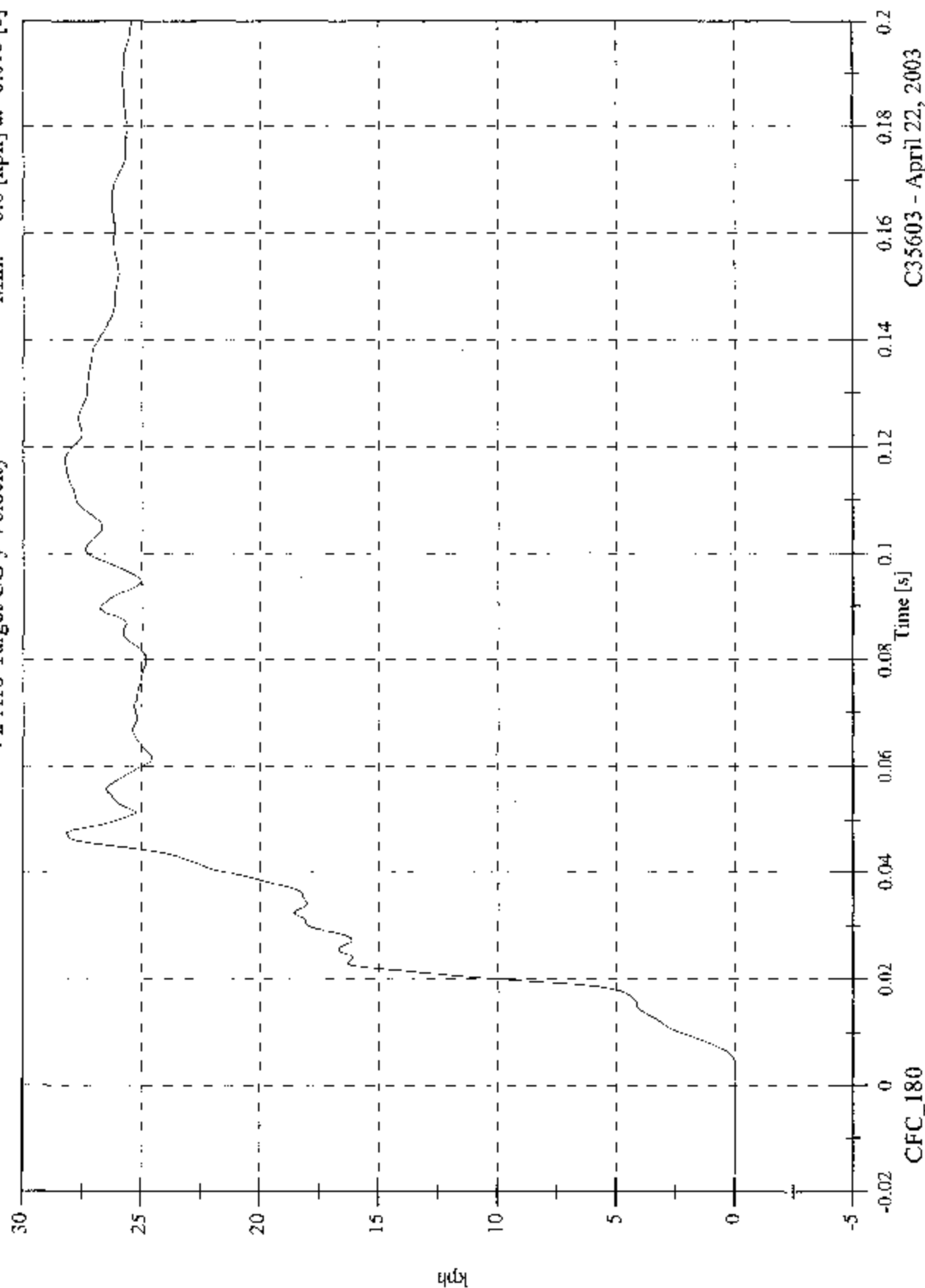
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A18 Target CG y Velocity

Max: 28.2 [kph] at 0.117 [s]

Min: -0.0 [kph] at -0.016 [s]

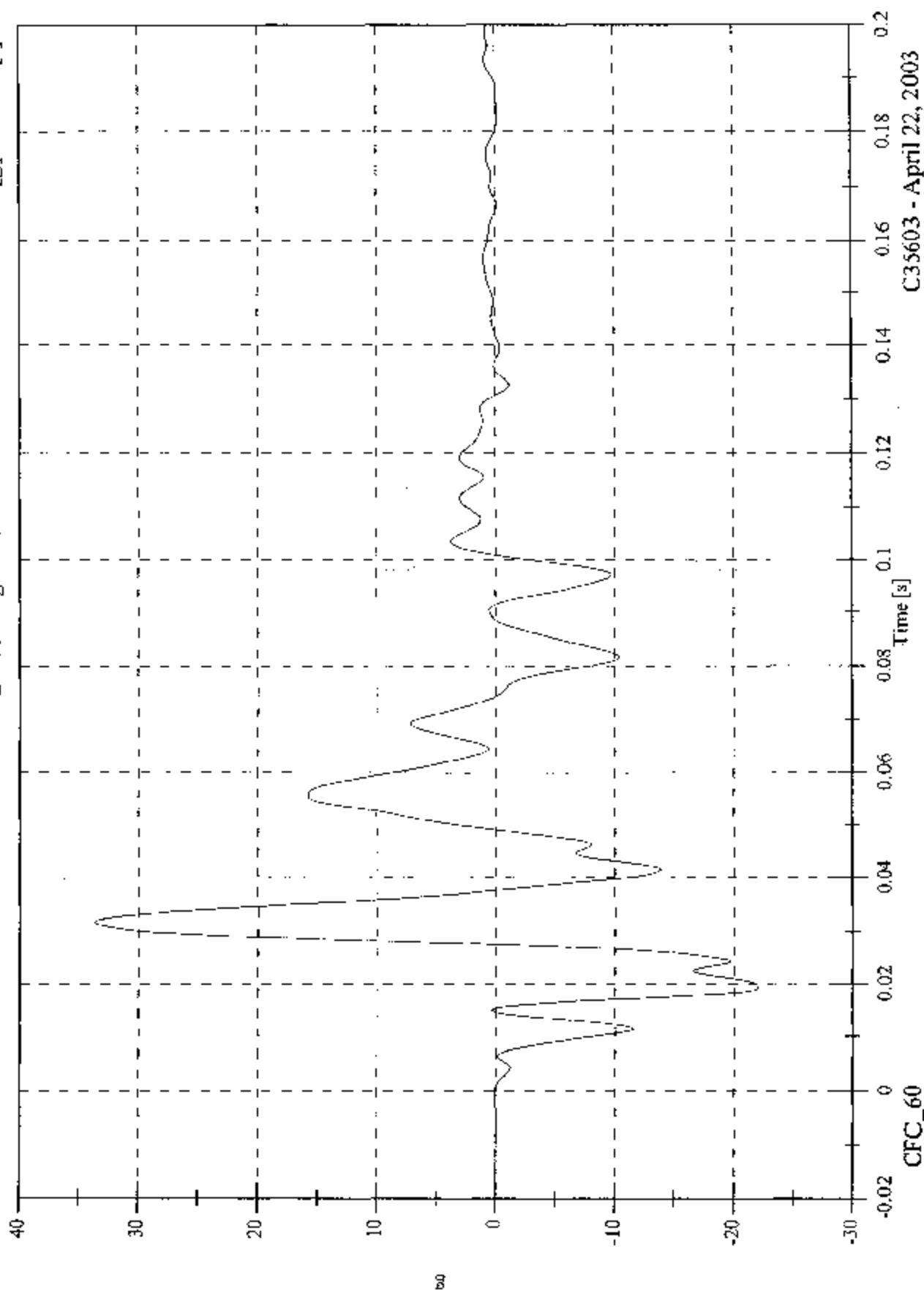


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A18 Target CG z

Max: 33.7 [g] at 0.032 [s]
Min: -22.0 [g] at 0.019 [s]

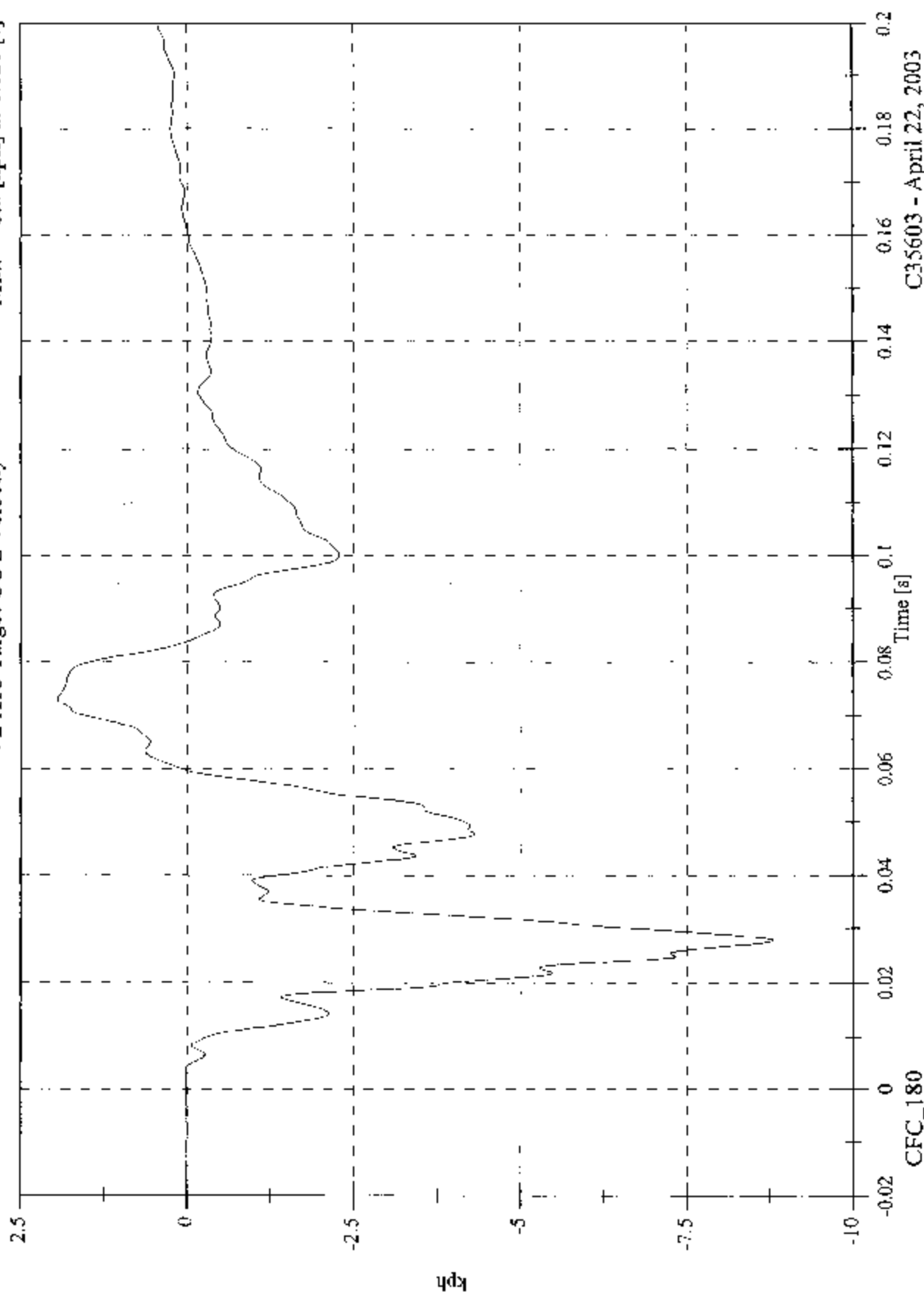


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2 A18 Target CG z Velocity

Max: 2.0 [kph] at 0.073 [s]
Min: -8.8 [kph] at 0.028 [s]



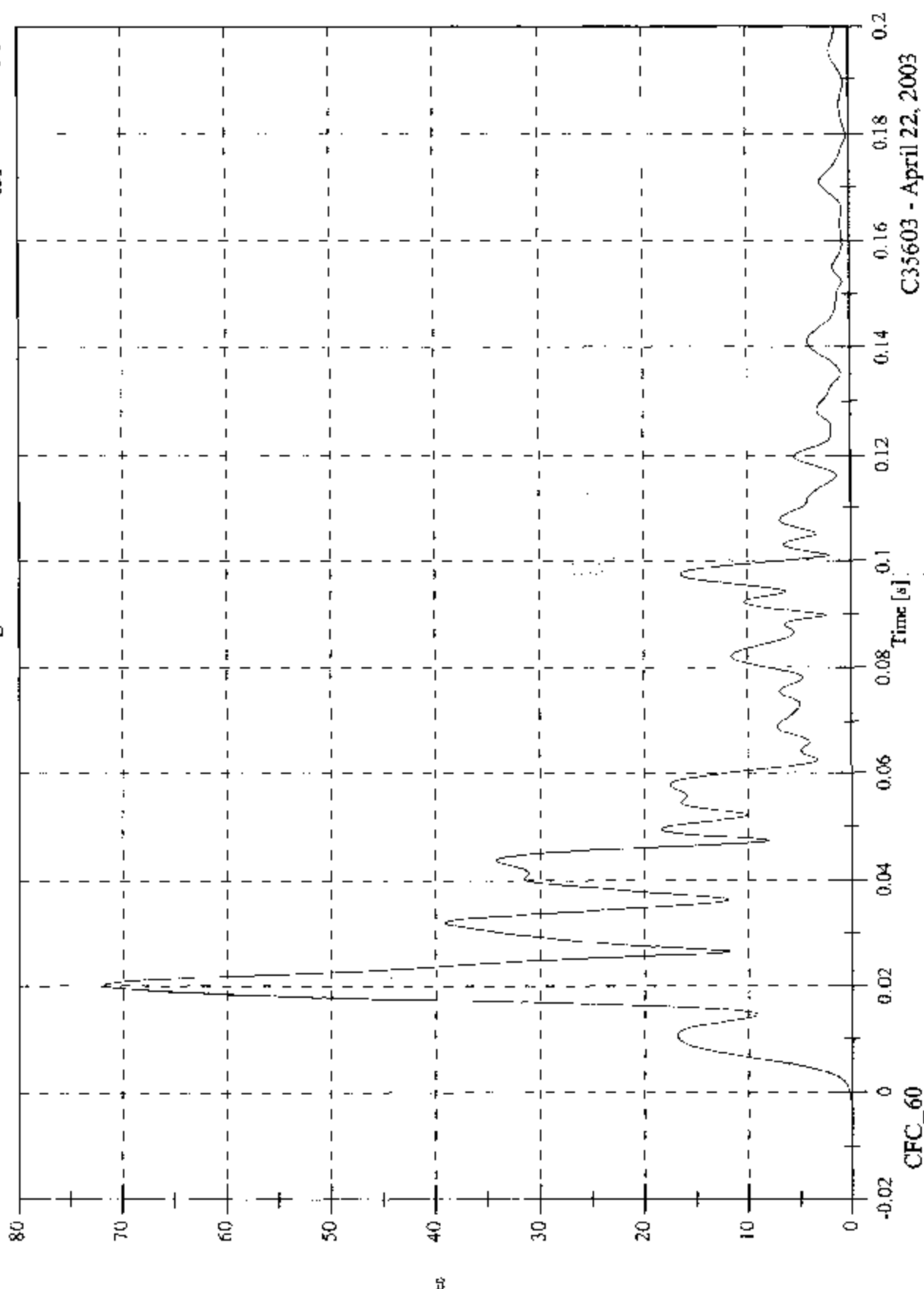
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 71.8 [g] at 0.020 [s]
Min: 0.0 [g] at -0.015 [s]

V2 A18 Target CG Resultant

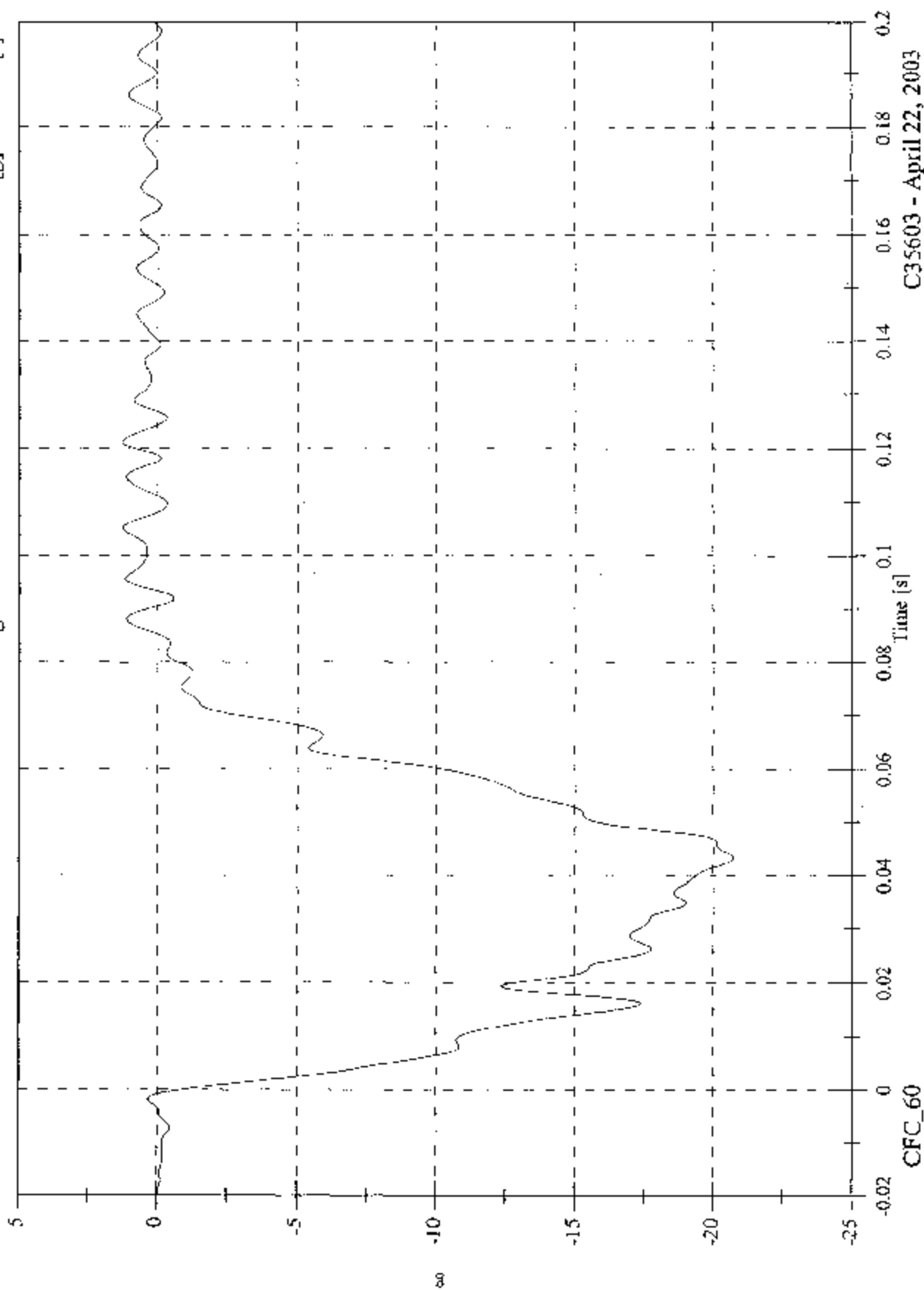


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V1 Moving Barrier CG X

Max: 1.3 [g] at 0.121 [s]
Min: -20.7 [g] at 0.043 [s]

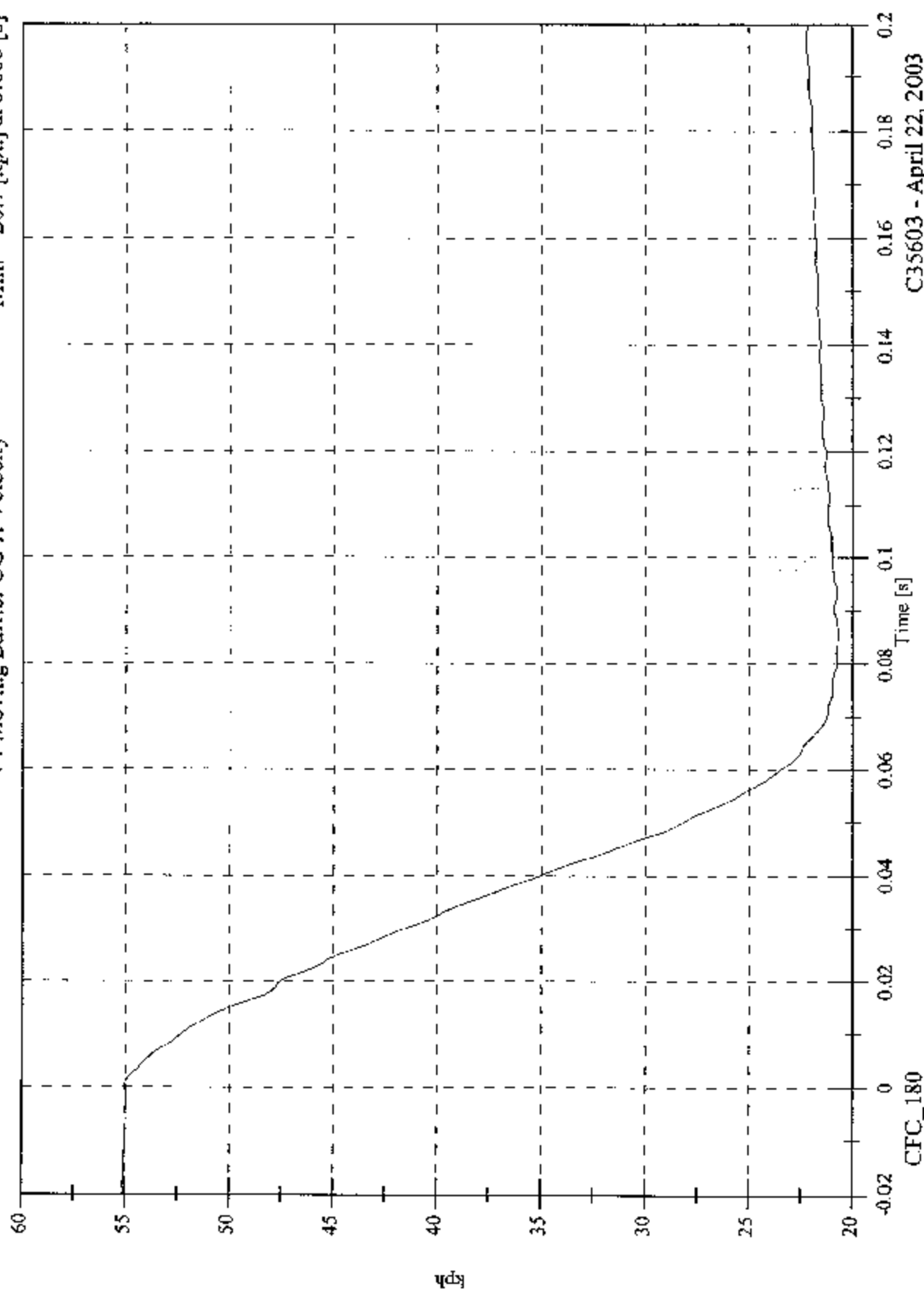


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

VI Moving Barrier CG X Velocity

Max: 55.1 [kph] at -0.018 [s]
Min: 20.7 [kph] at 0.086 [s]



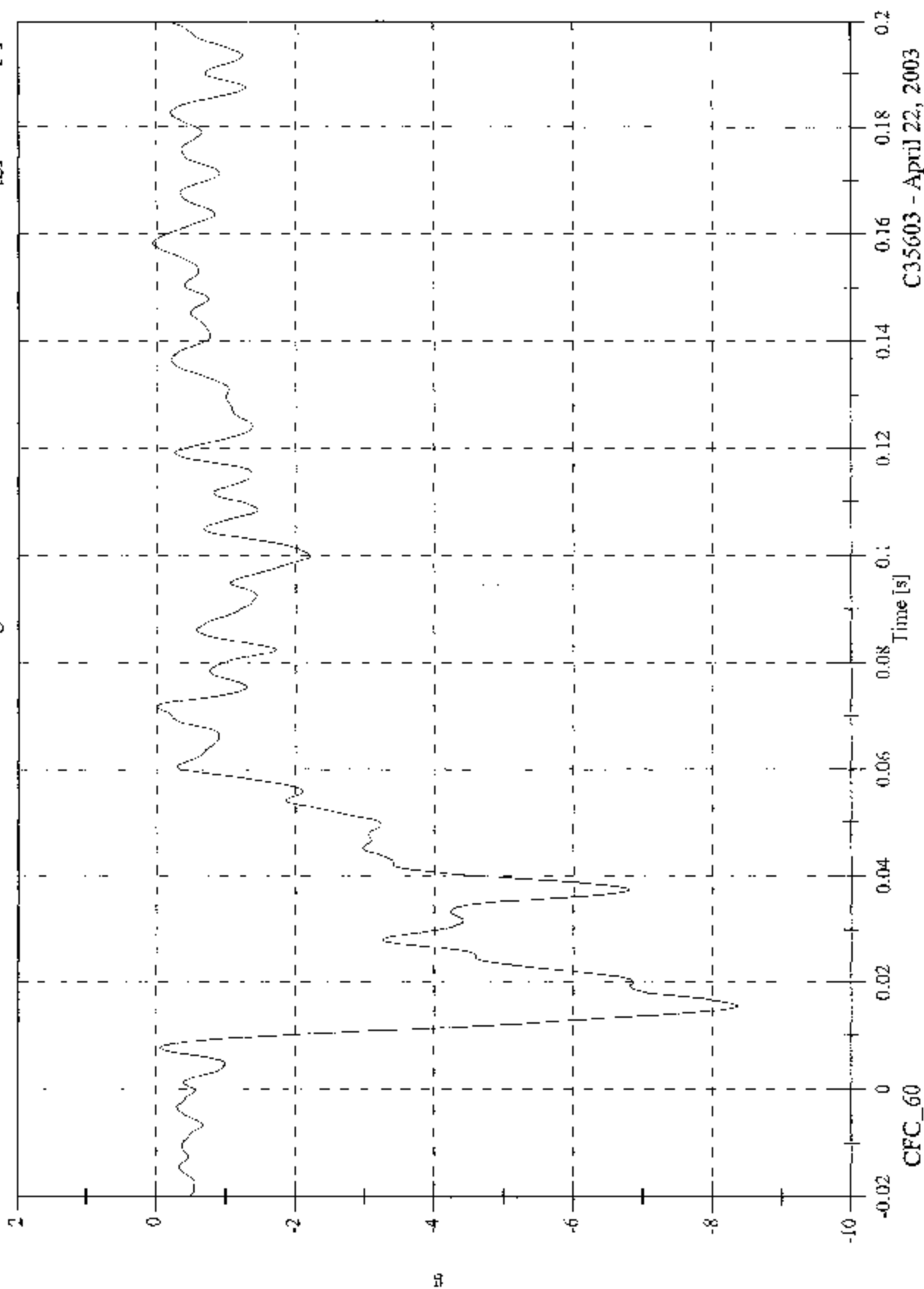
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V1 Moving Barrier CG Y

Max: 0.0 [g] at 0.158 [s]
Min: -8.4 [g] at 0.016 [s]

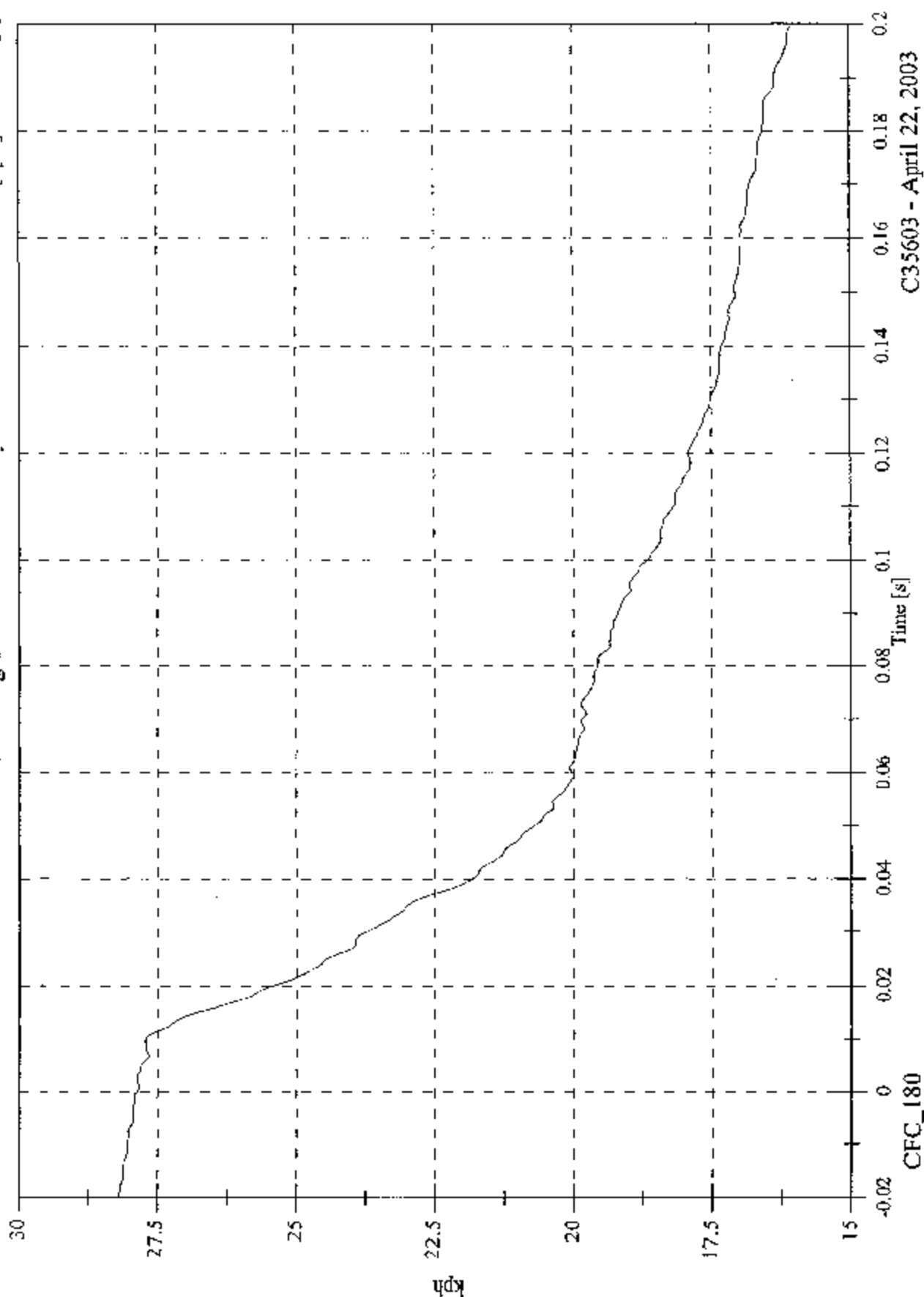


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

VI Moving Barrier CG Y Velocity

Max: 28.2 [kph] at -0.020 [s]
Min: 16.0 [kph] at 0.200 [s]

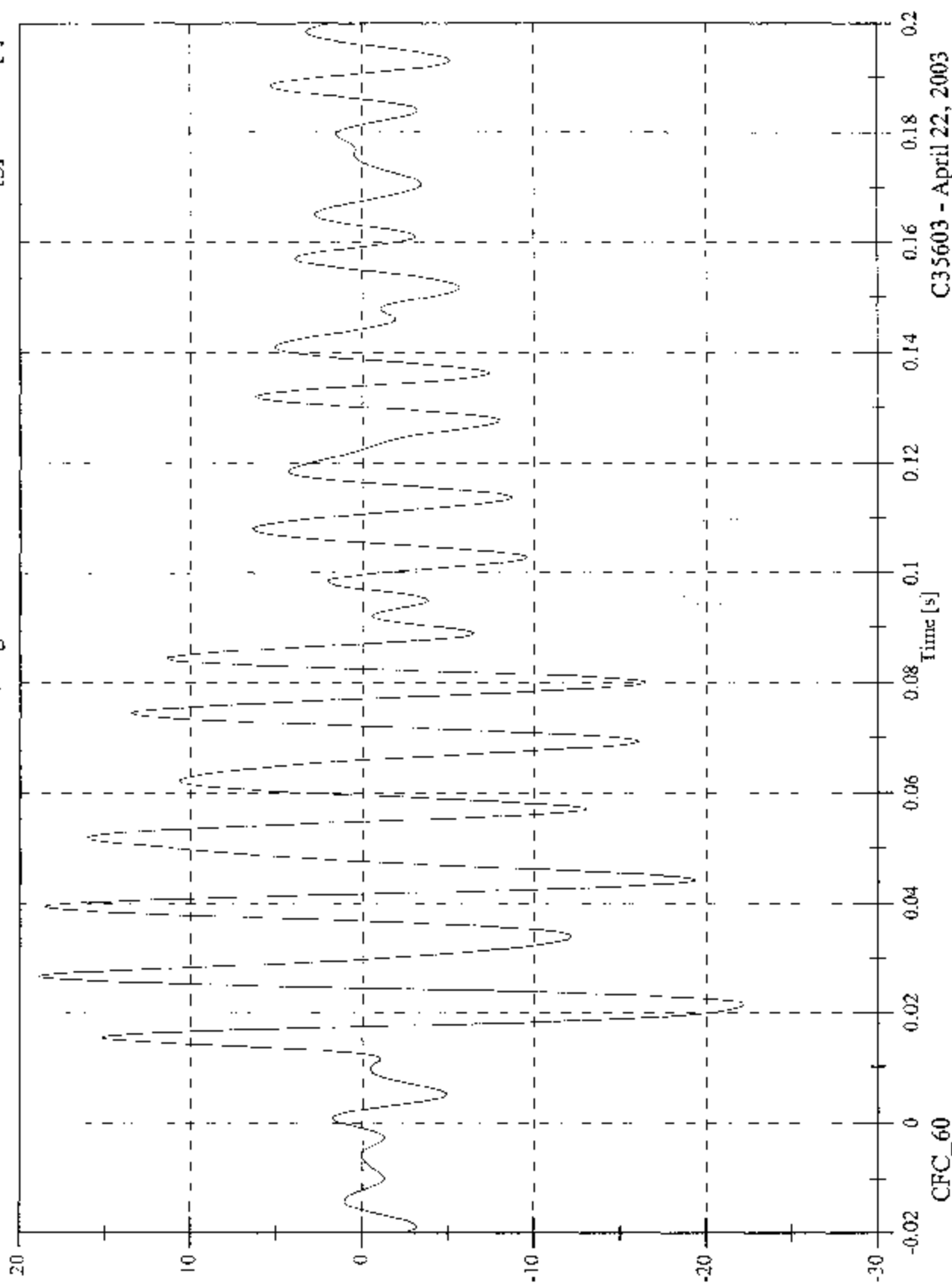


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V1 Moving Barrier CG Z

Max: 18.9 [g] at 0.026 [s]
Min: -22.2 [g] at 0.021 [s]

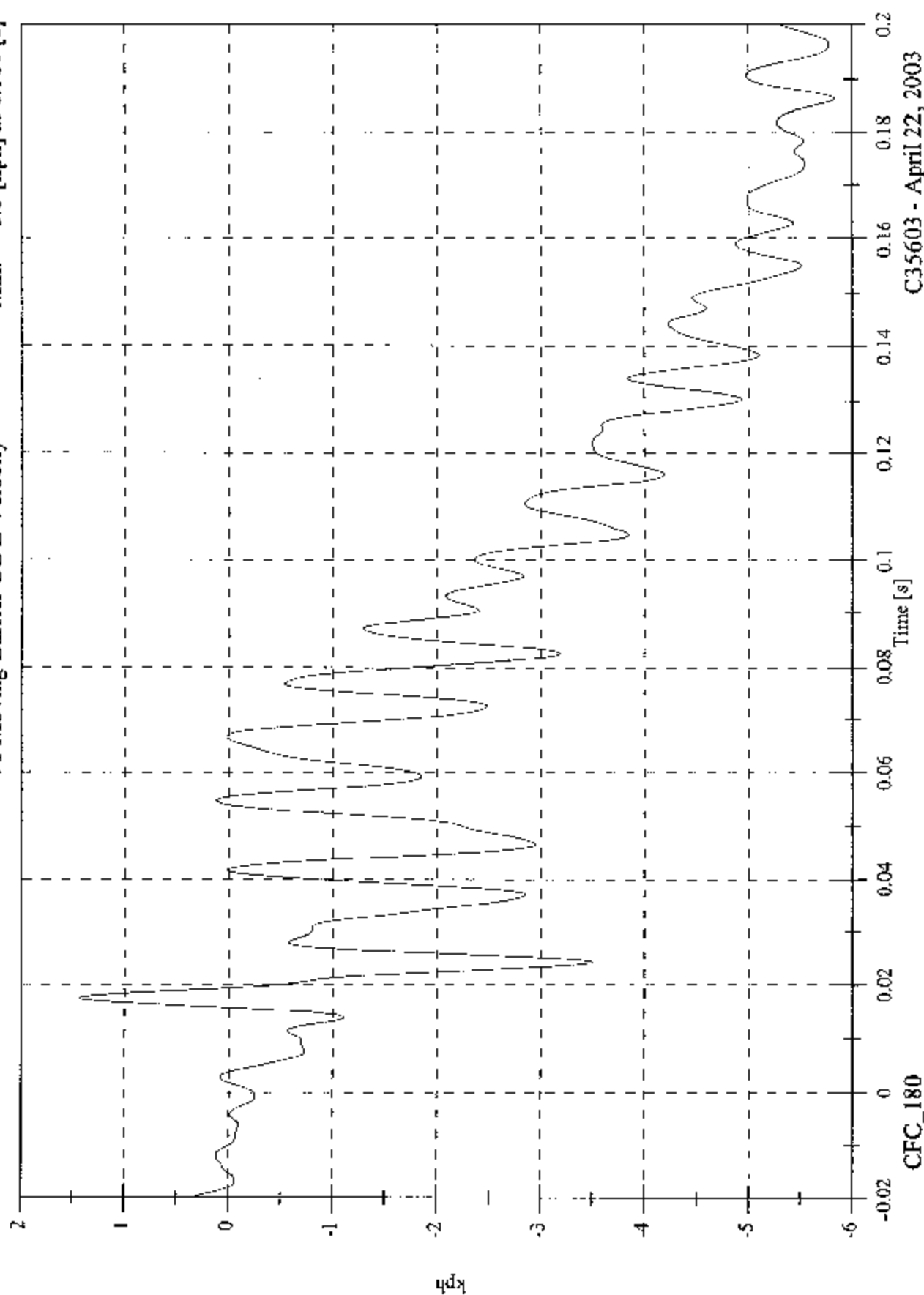


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V1 Moving Barrier CG Z Velocity

Max: 1.4 [kph] at 0.017 [s]
Min: -5.8 [kph] at 0.186 [s]

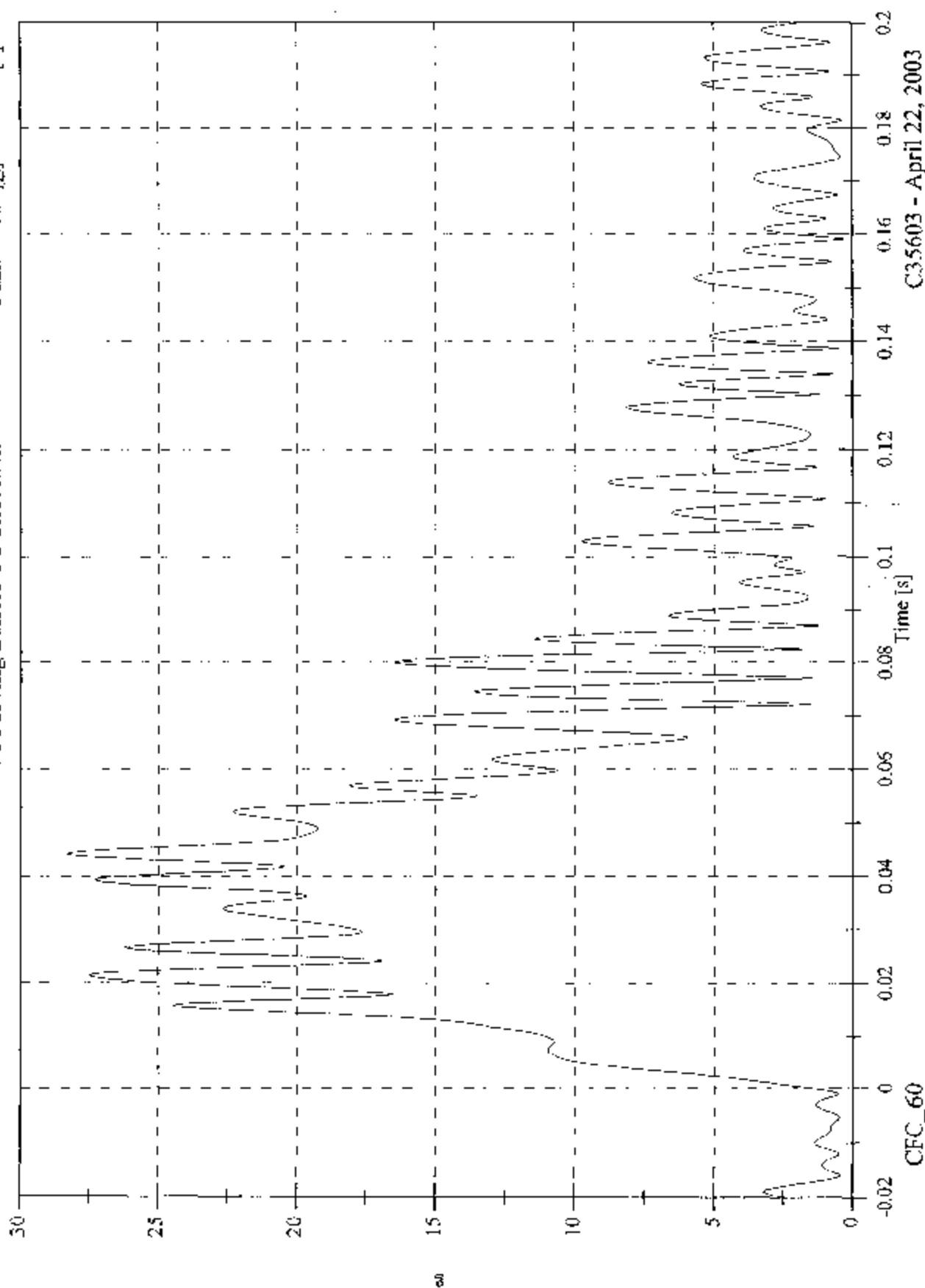


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V1 Moving Barrier CG Resultant

Max: 28.3 [g] at 0.044 [s]
Min: 0.2 [g] at 0.159 [s]

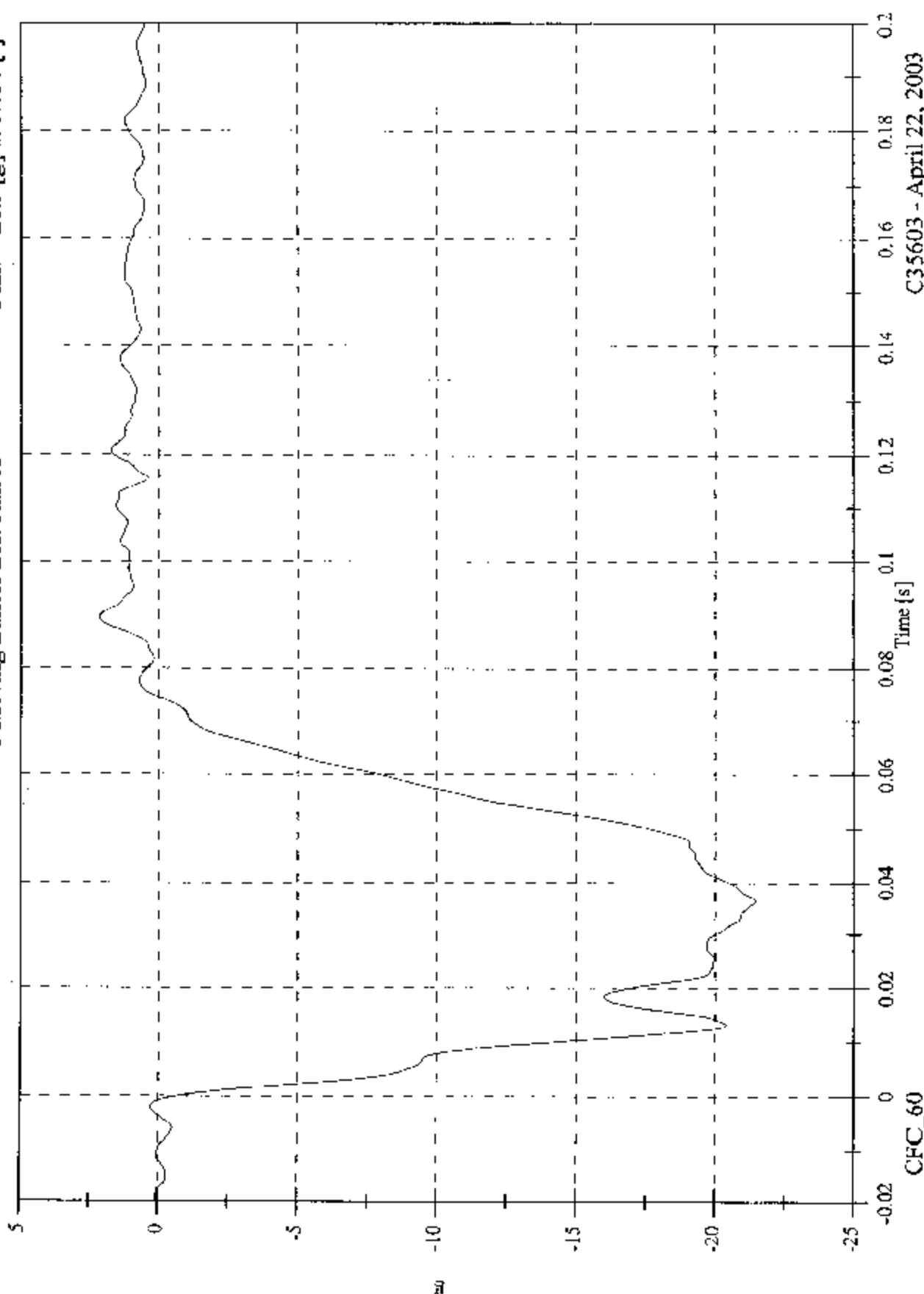


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V1 Moving Barrier Left Rail X

Max: 2.1 [g] at 0.090 [s]
Min: -21.5 [g] at 0.036 [s]



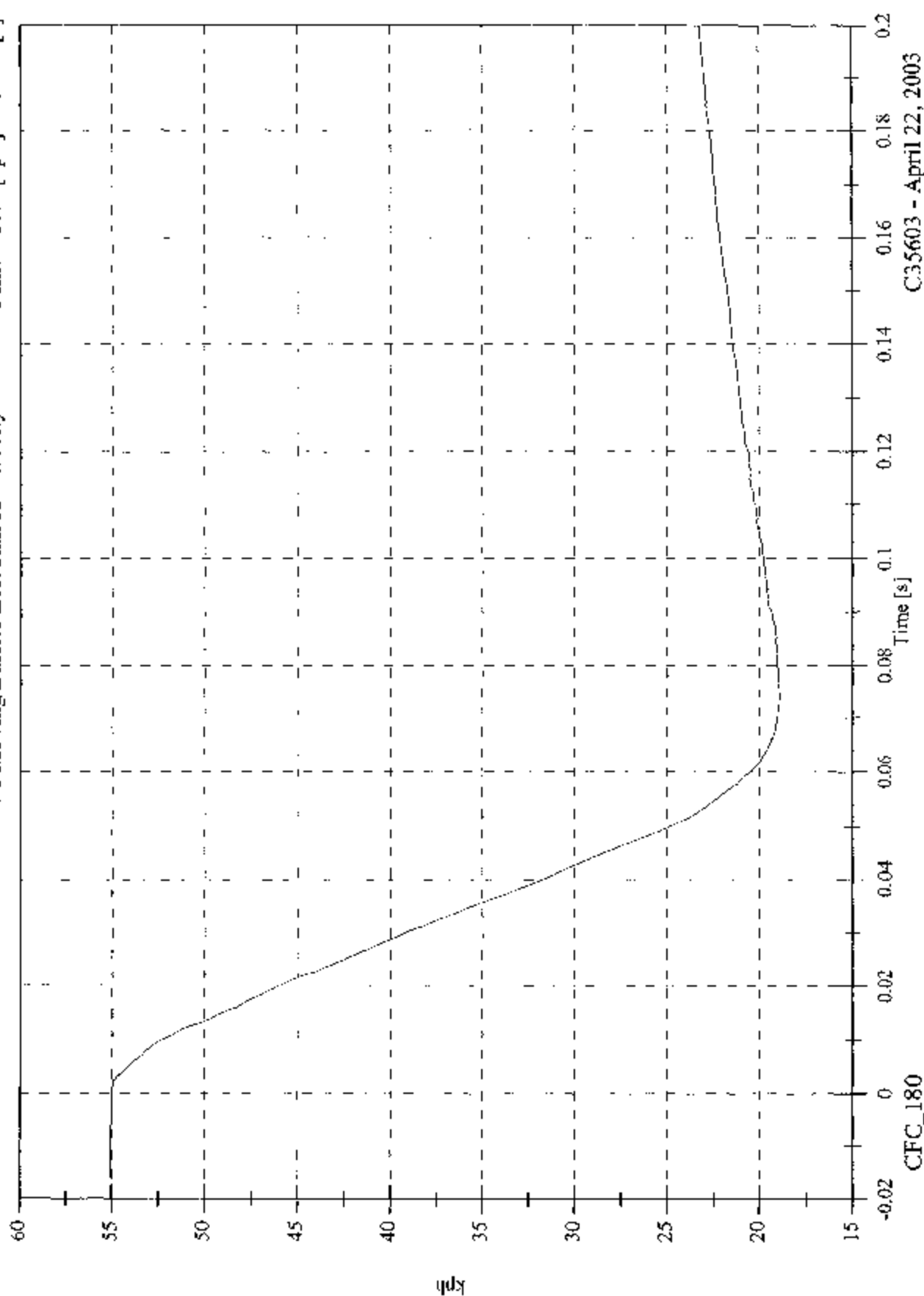
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 55.1 [kph] at -0.017 [s]

Min: 18.9 [kph] at 0.075 [s]

V1 Moving Barrier Left Rail X Velocity

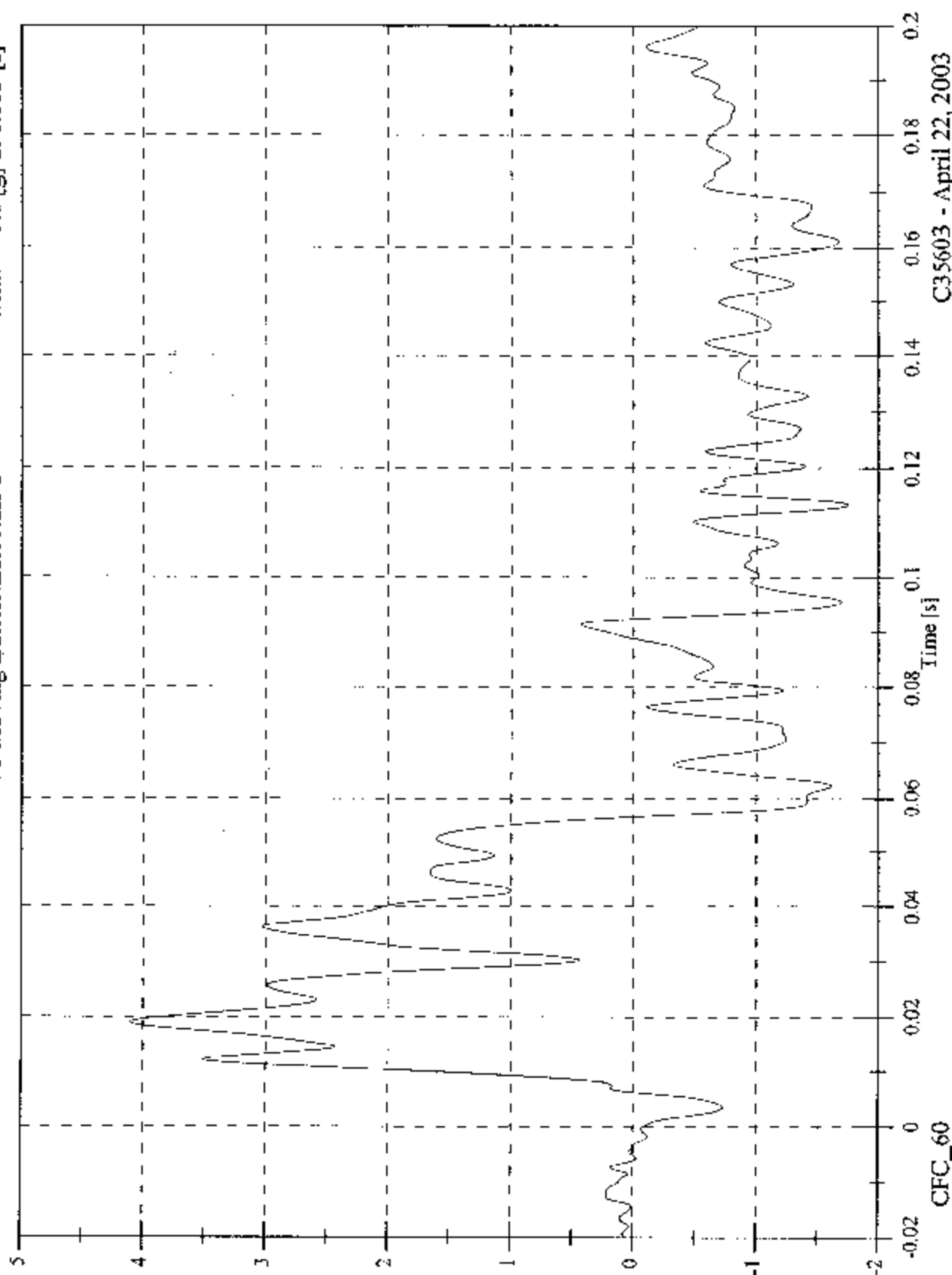


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V1 Moving Barrier Left Rail Y

Max: 4.1 [g] at 0.019 [s]
Min: -1.8 [g] at 0.113 [s]

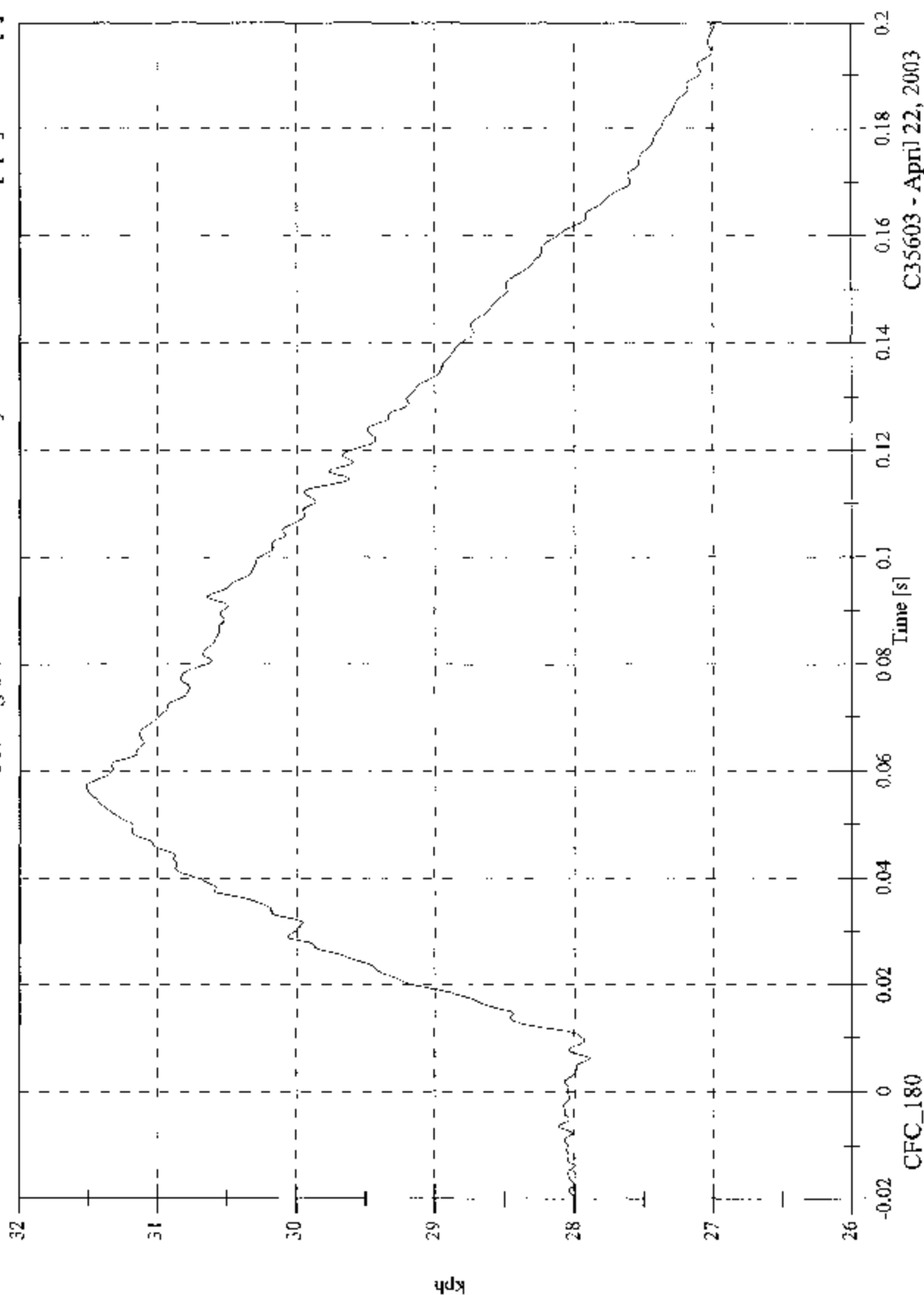


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V1 Moving Barrier Left Rail Y Velocity

Max: 31.5 [kph] at 0.057 [s]
Min: 27.0 [kph] at 0.200 [s]



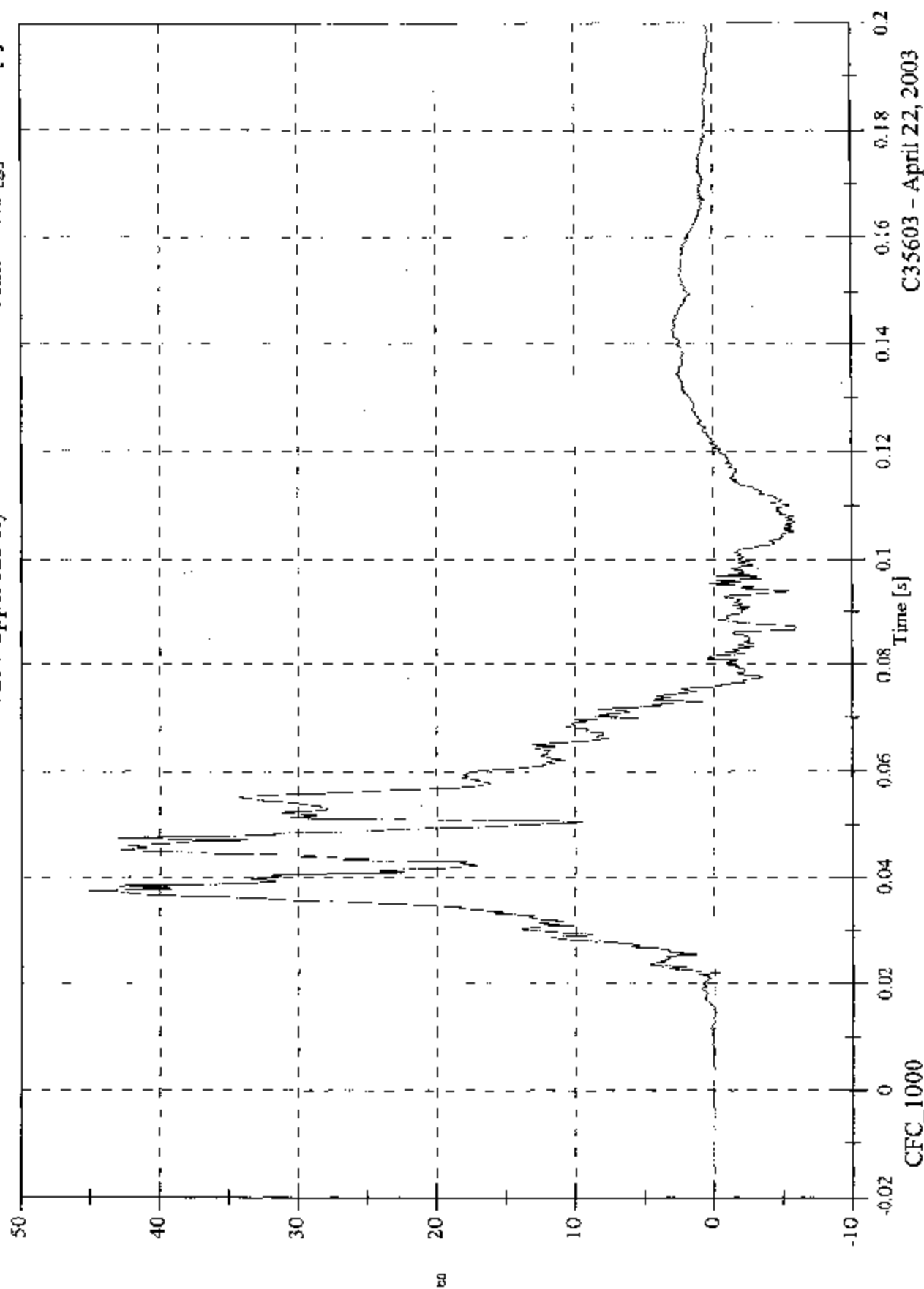
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Upper Rib Ry

Max: 45.3 [g] at 0.038 [s]
Min: -6.1 [g] at 0.087 [s]

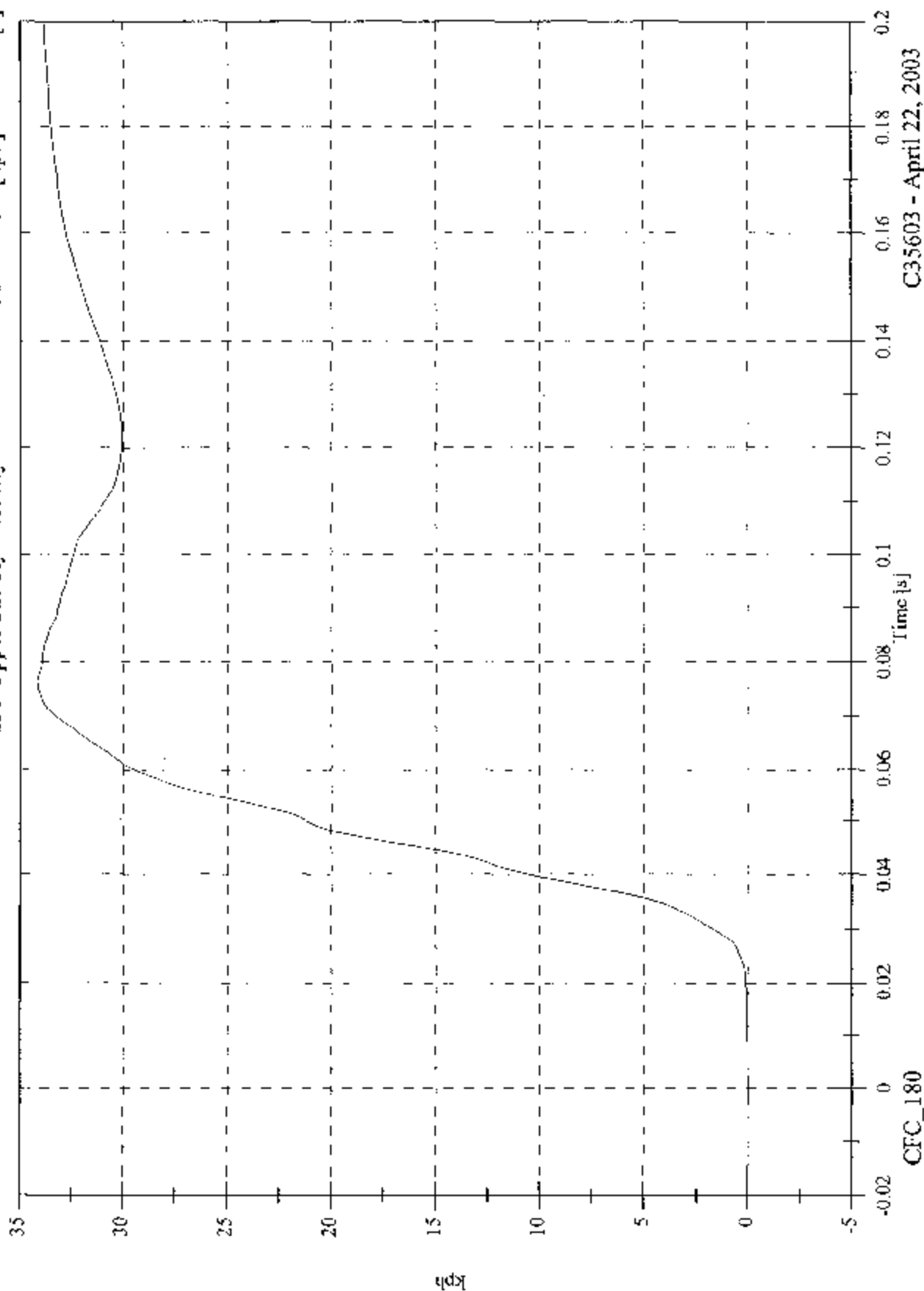


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Upper Rib Ry Velocity

Max: 34.2 [kph] at 0.076 [s]
Min: -0.0 [kph] at -0.020 [s]

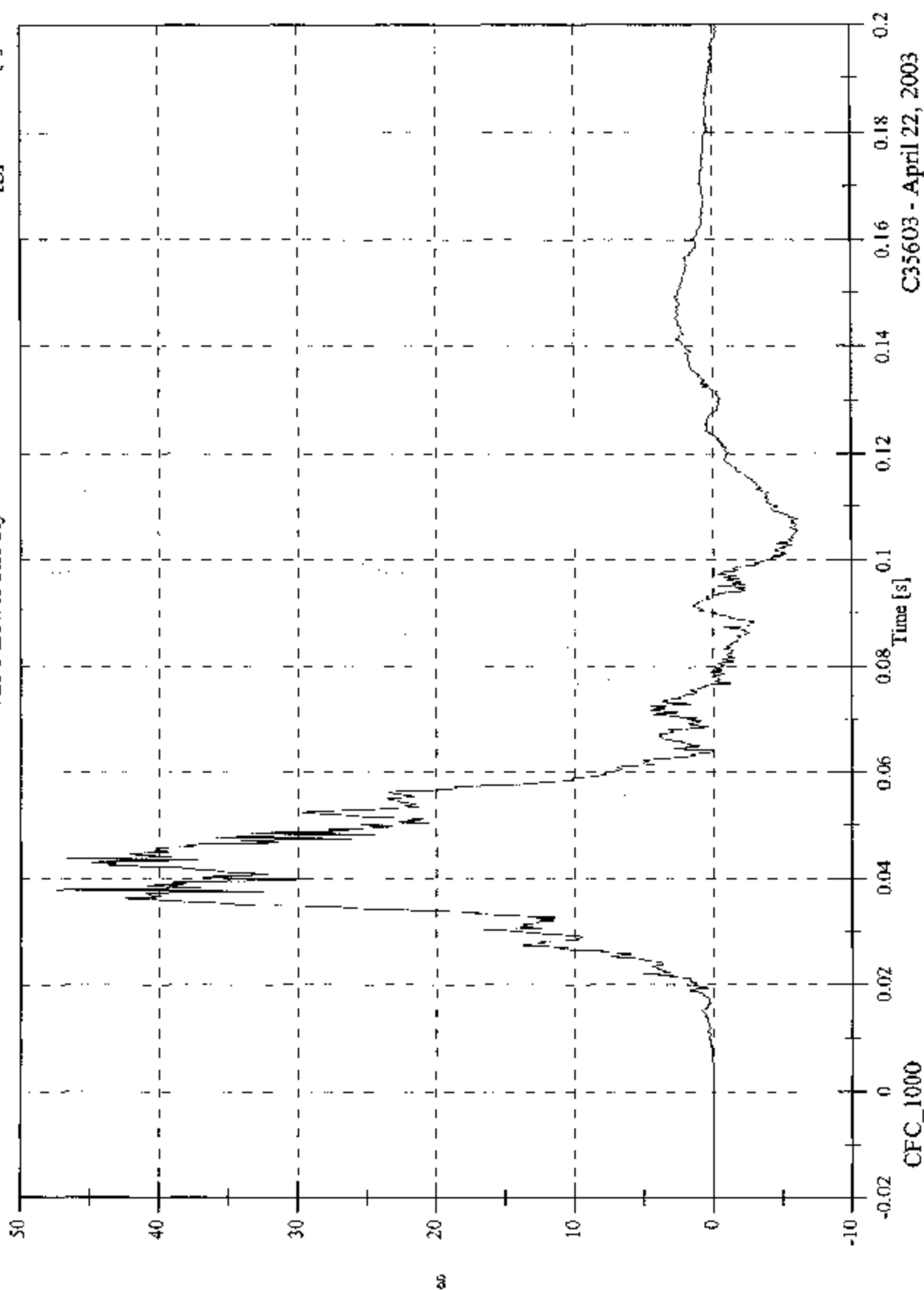


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Lower Rib Ry

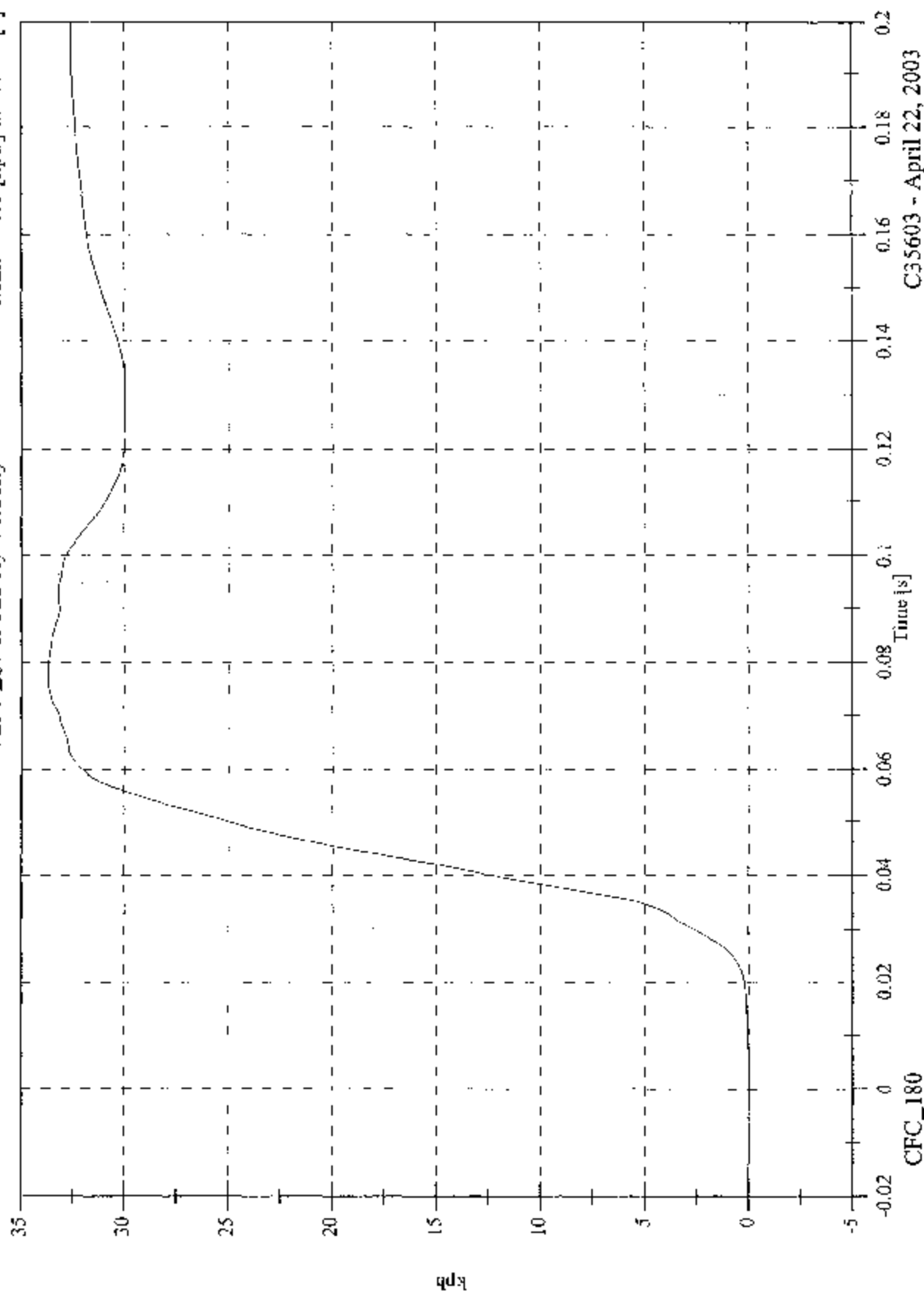
Max: 47.5 [g] at 0.038 [s]
Min: -6.2 [g] at 0.108 [s]



FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Lower Rib Ry Velocity

Max: 33.7 [kph] at 0.076 [s]
Min: -0.0 [kph] at -0.016 [s]



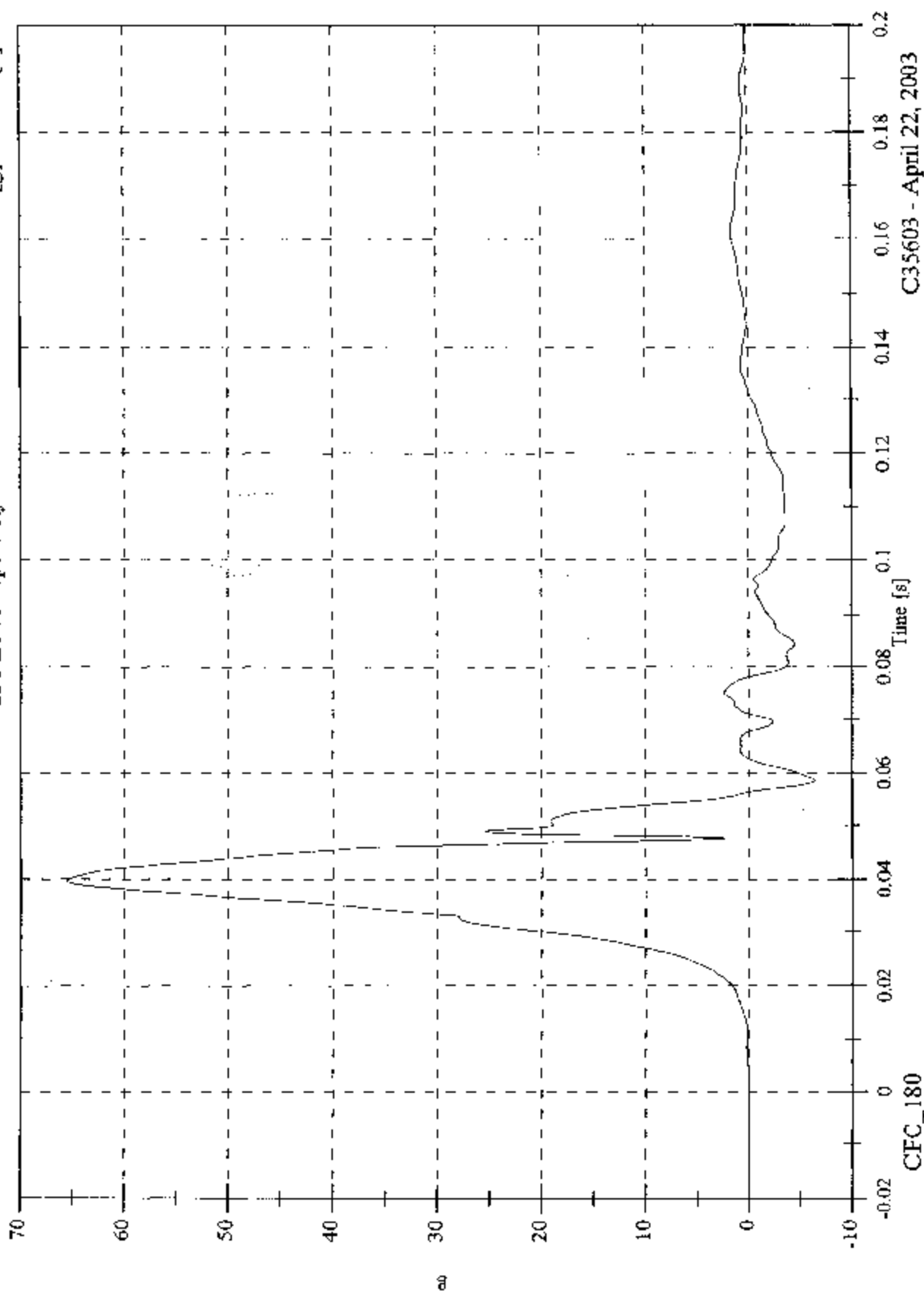
CFC_180

C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Lower Spine Ry

Max: 65.6 [g] at 0.040 [s]
Min: -6.4 [g] at 0.058 [s]



CFC_180

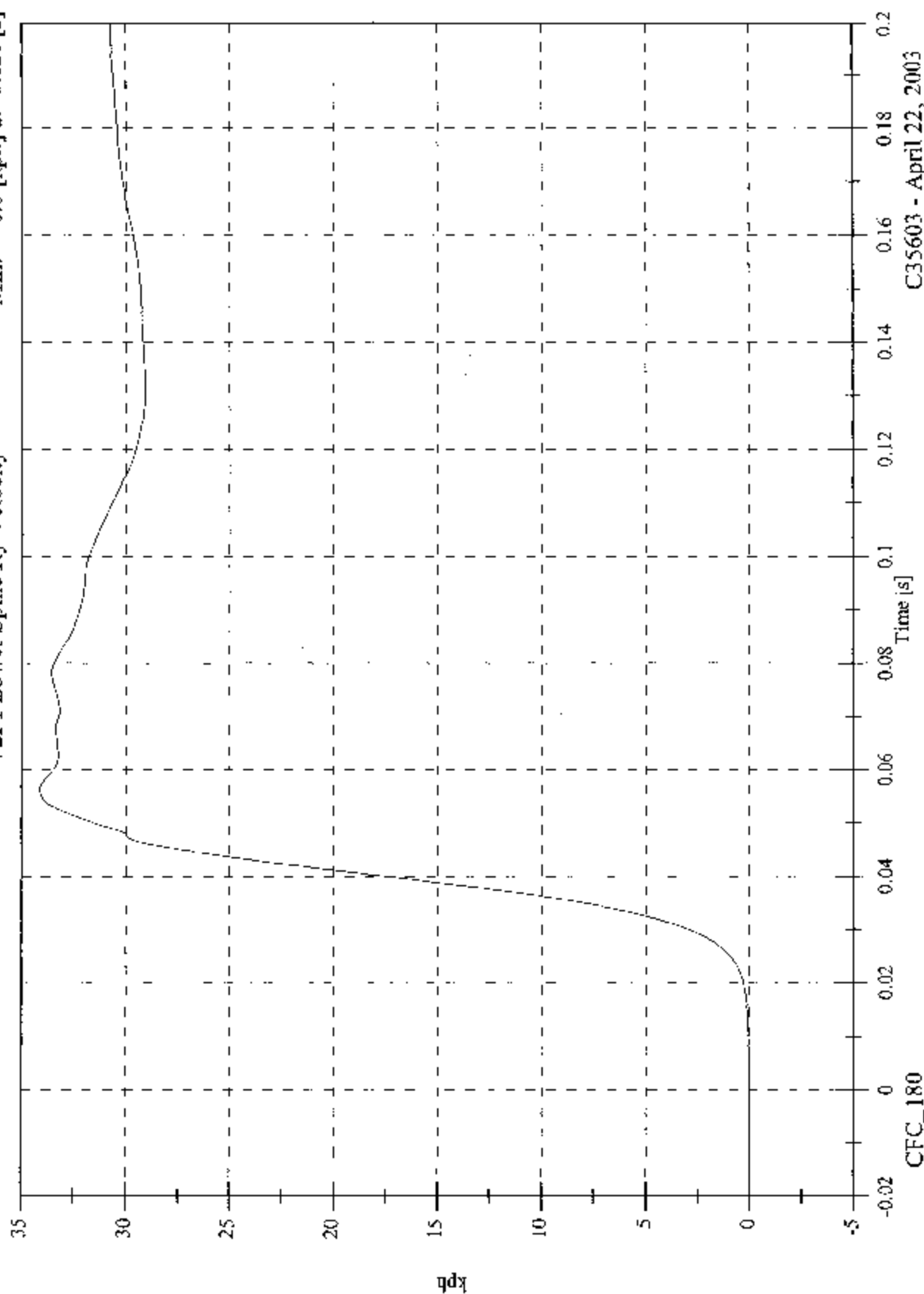
C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 34.1 [kph] at 0.056 [s]

Min: -0.0 [kph] at -0.020 [s]

V2P1 Lower Spine Ry Velocity

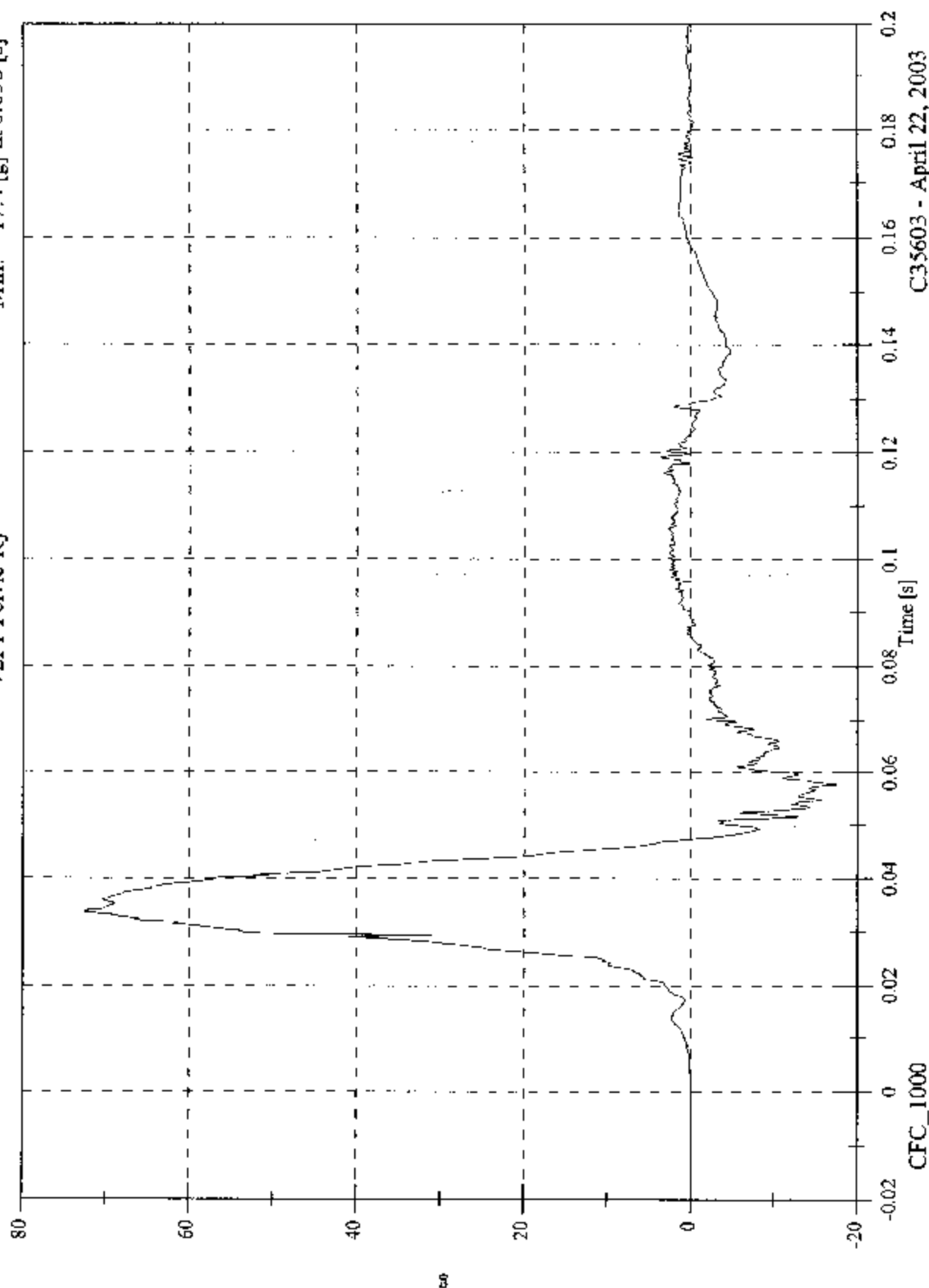


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Pelvic Ry

Max: 72.6 [g] at 0.034 [s]
Min: -17.4 [g] at 0.058 [s]

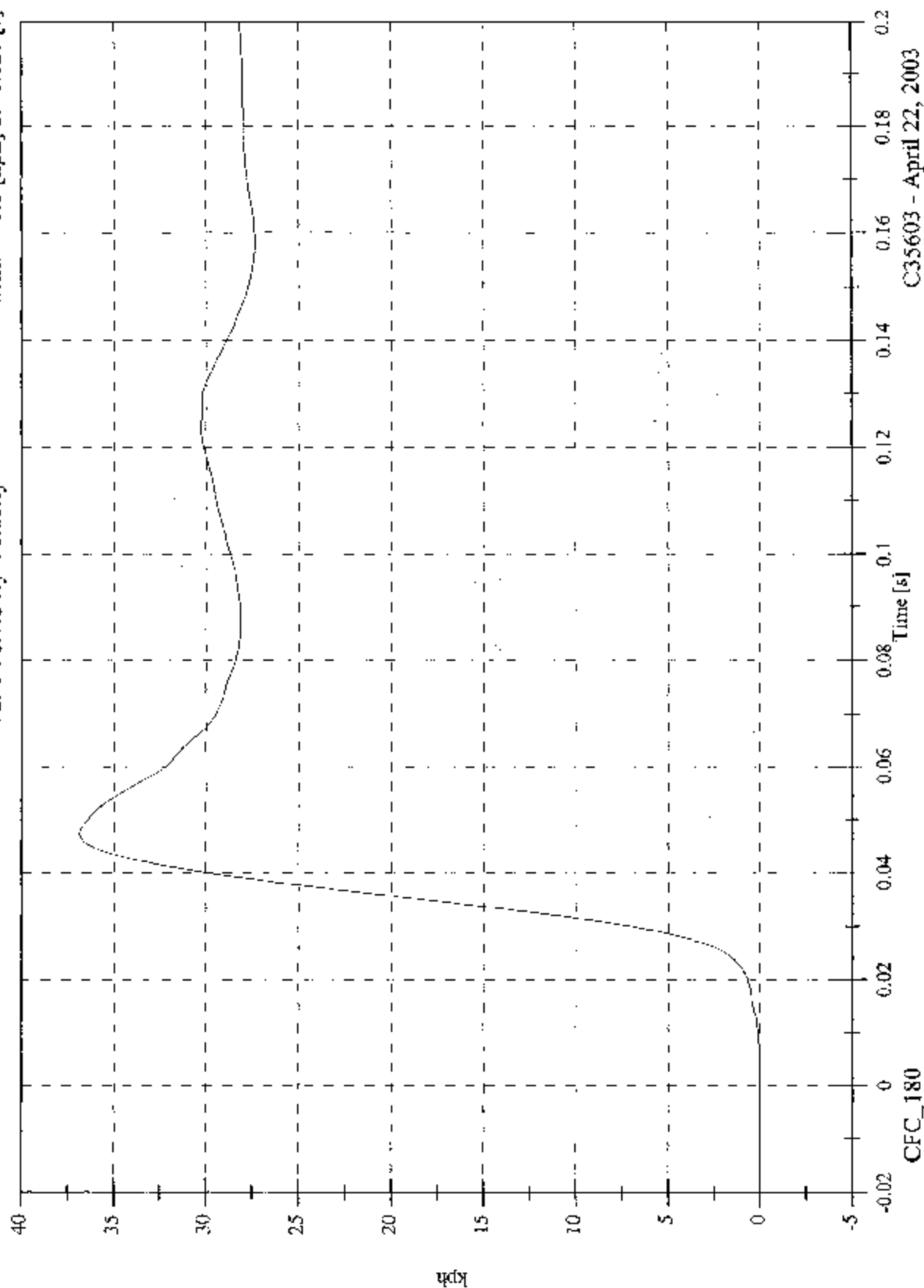


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Pelvic Ry Velocity

Max: 36.9 [kph] at 0.047 [s]
Min: -0.0 [kph] at -0.020 [s]

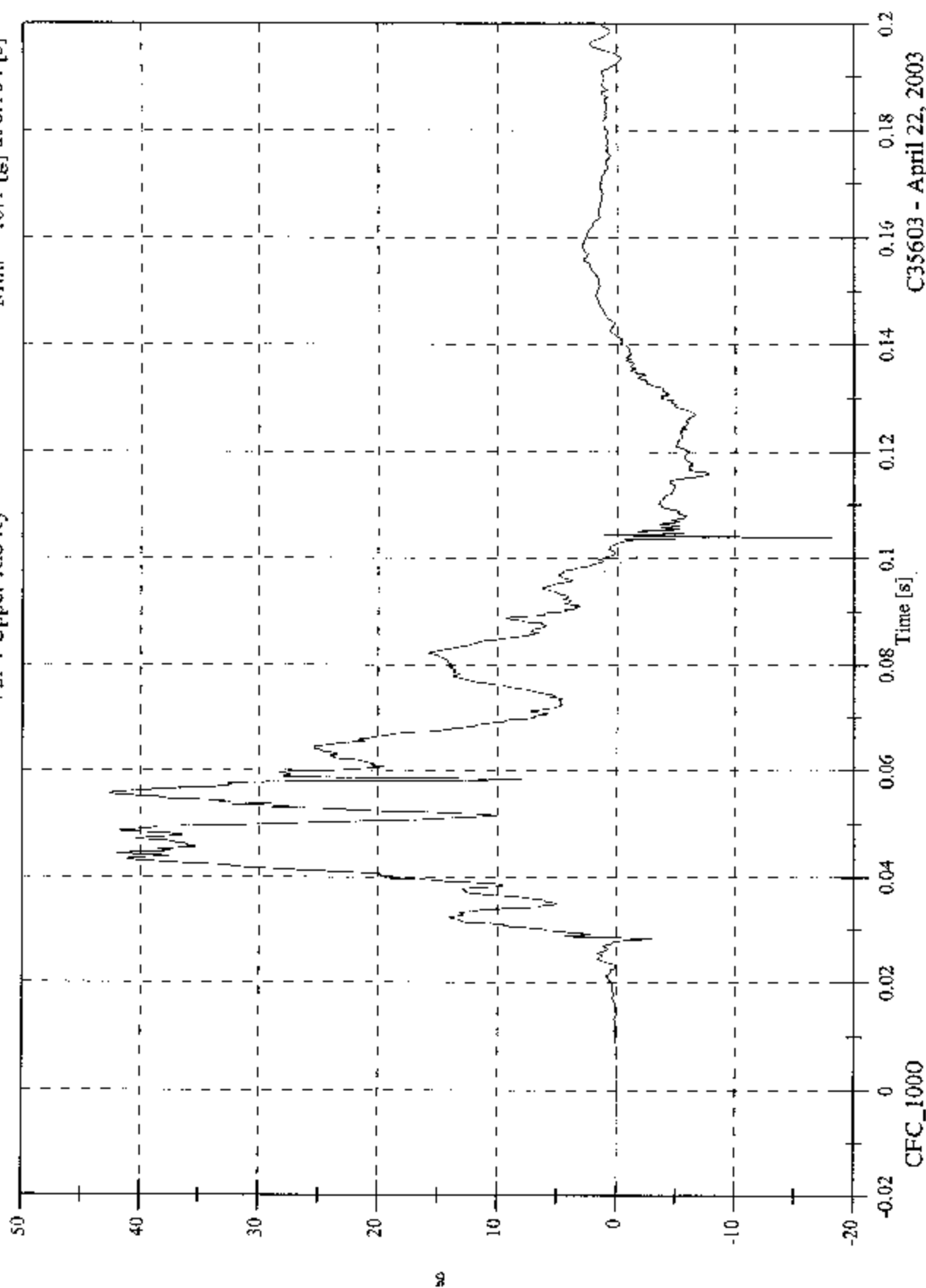


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Upper Rib Ry

Max: 42.7 [g] at 0.056 [s]
Min: -18.1 [g] at 0.104 [s]

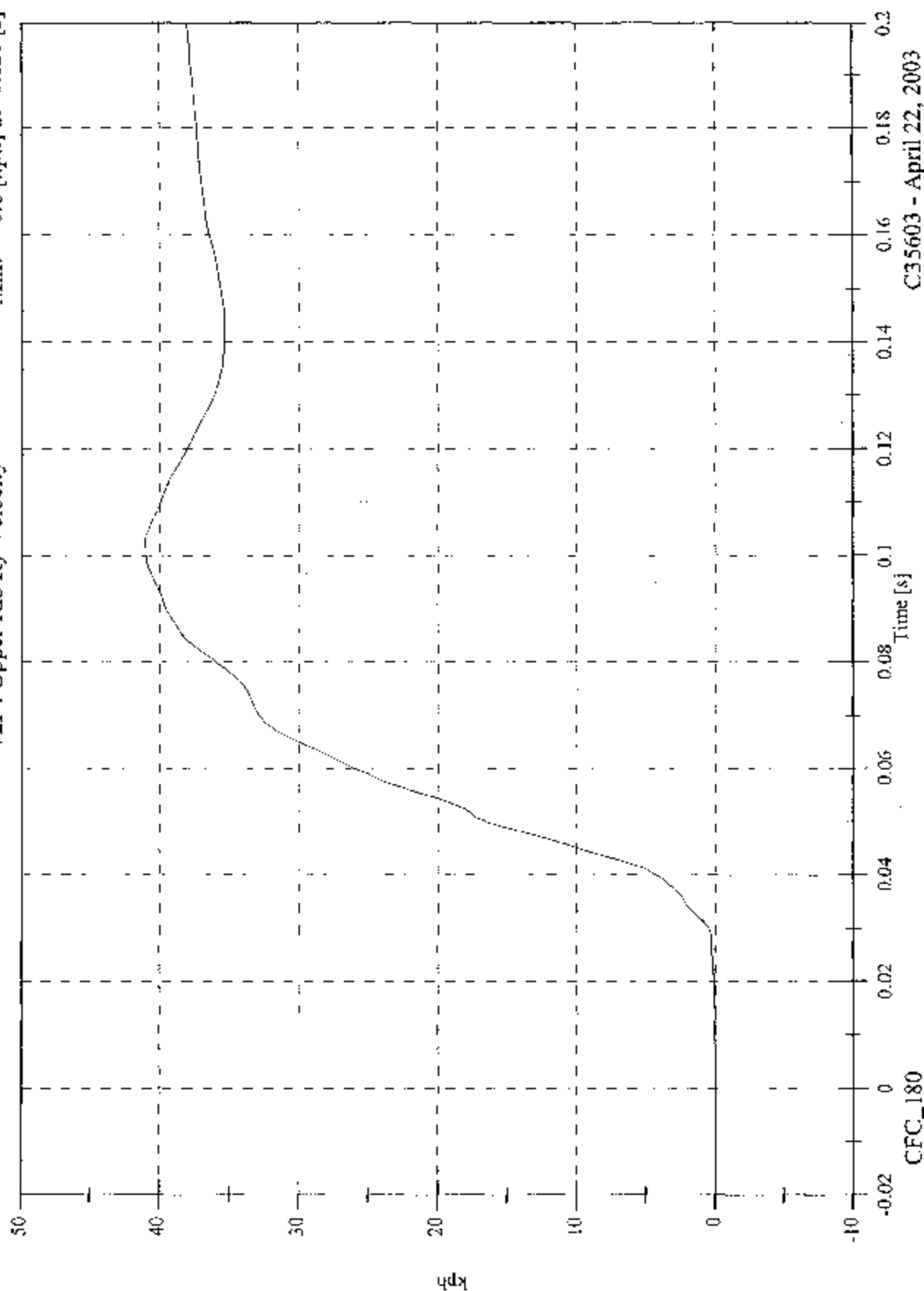


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Upper Rib Ry Velocity

Max: 41.0 [kph] at 0.103 [s]
Min: -0.0 [kph] at -0.020 [s]

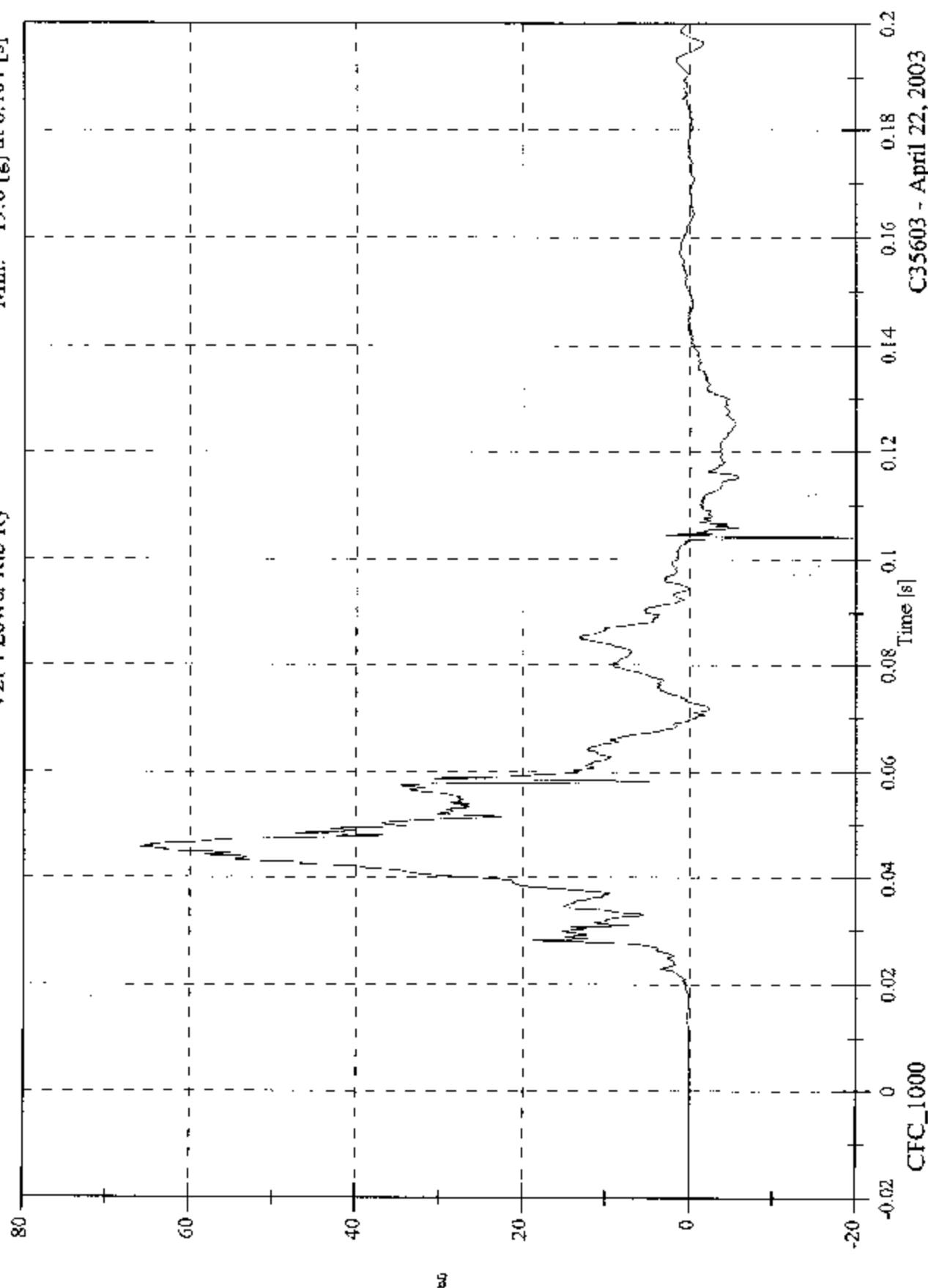


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Lower Rib Ry

Max: 65.9 [g] at 0.046 [s]
Min: -19.6 [g] at 0.104 [s]

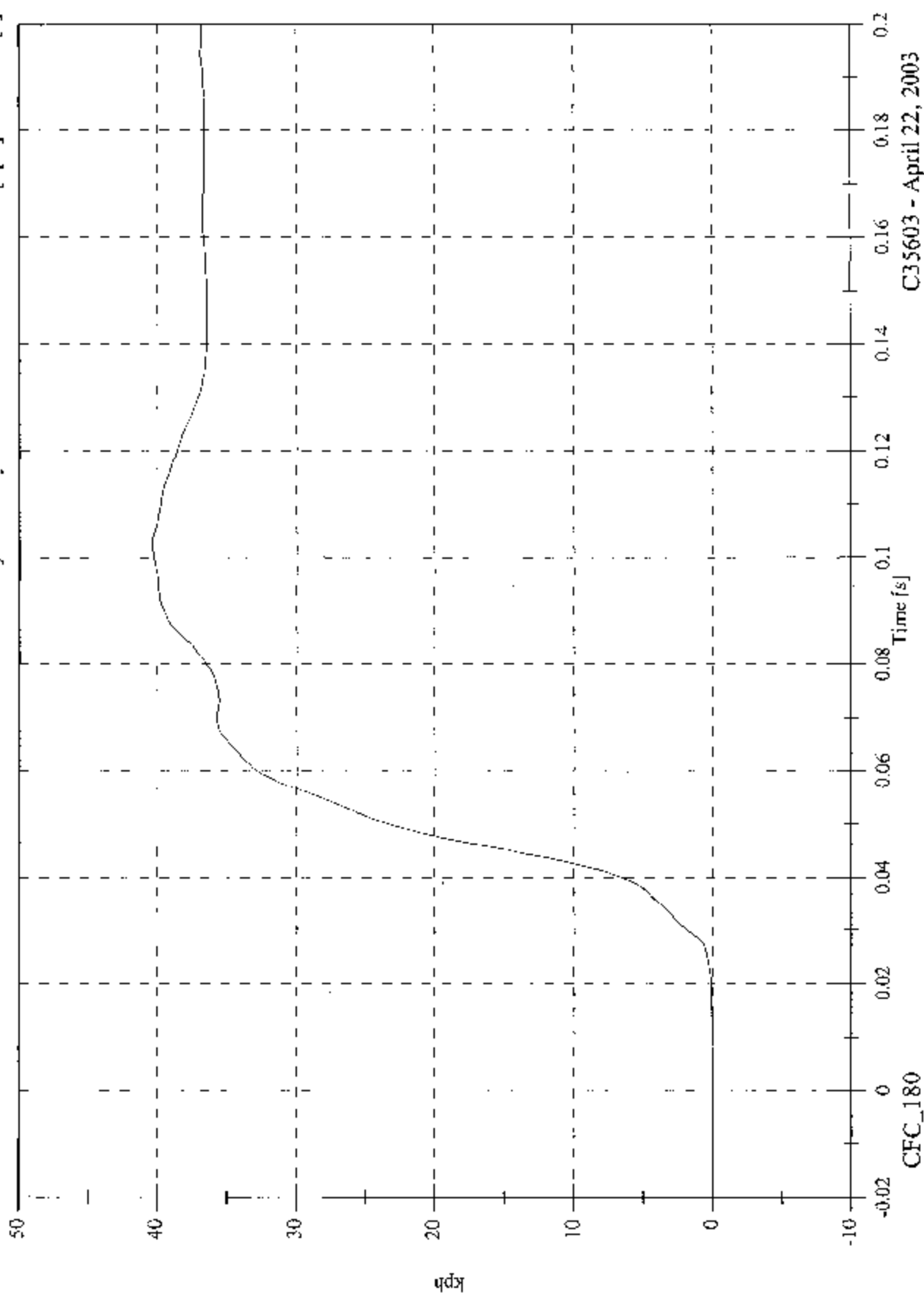


C35603 - April 22, 2003

TMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Lower Rib Ry Velocity

Max: 40.4 [kph] at 0.103 [s]
Min: -0.0 [kph] at -0.020 [s]

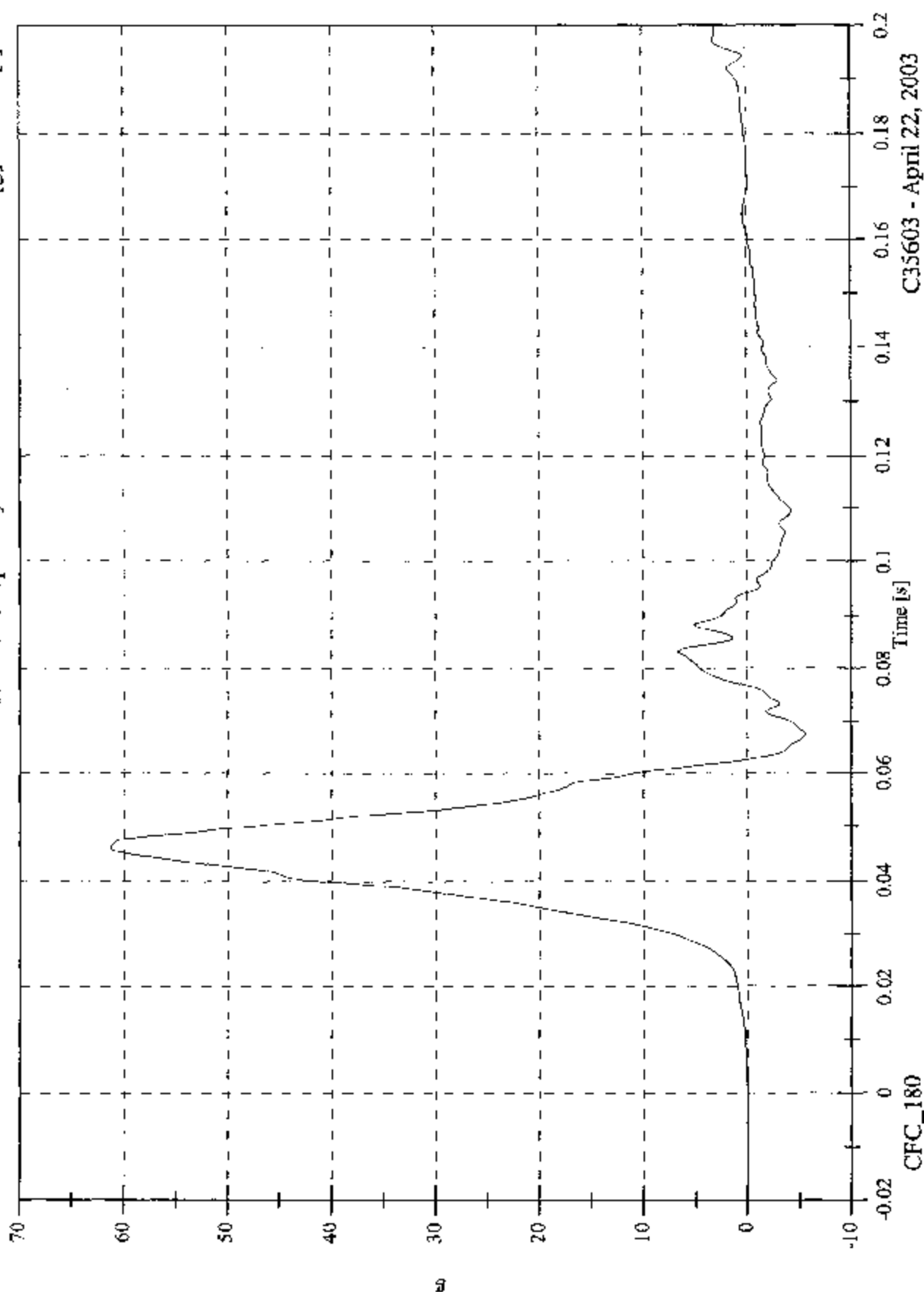


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Lower Spine Ry

Max: 61.3 [g] at 0.046 [s]
Min: -5.6 [g] at 0.068 [s]

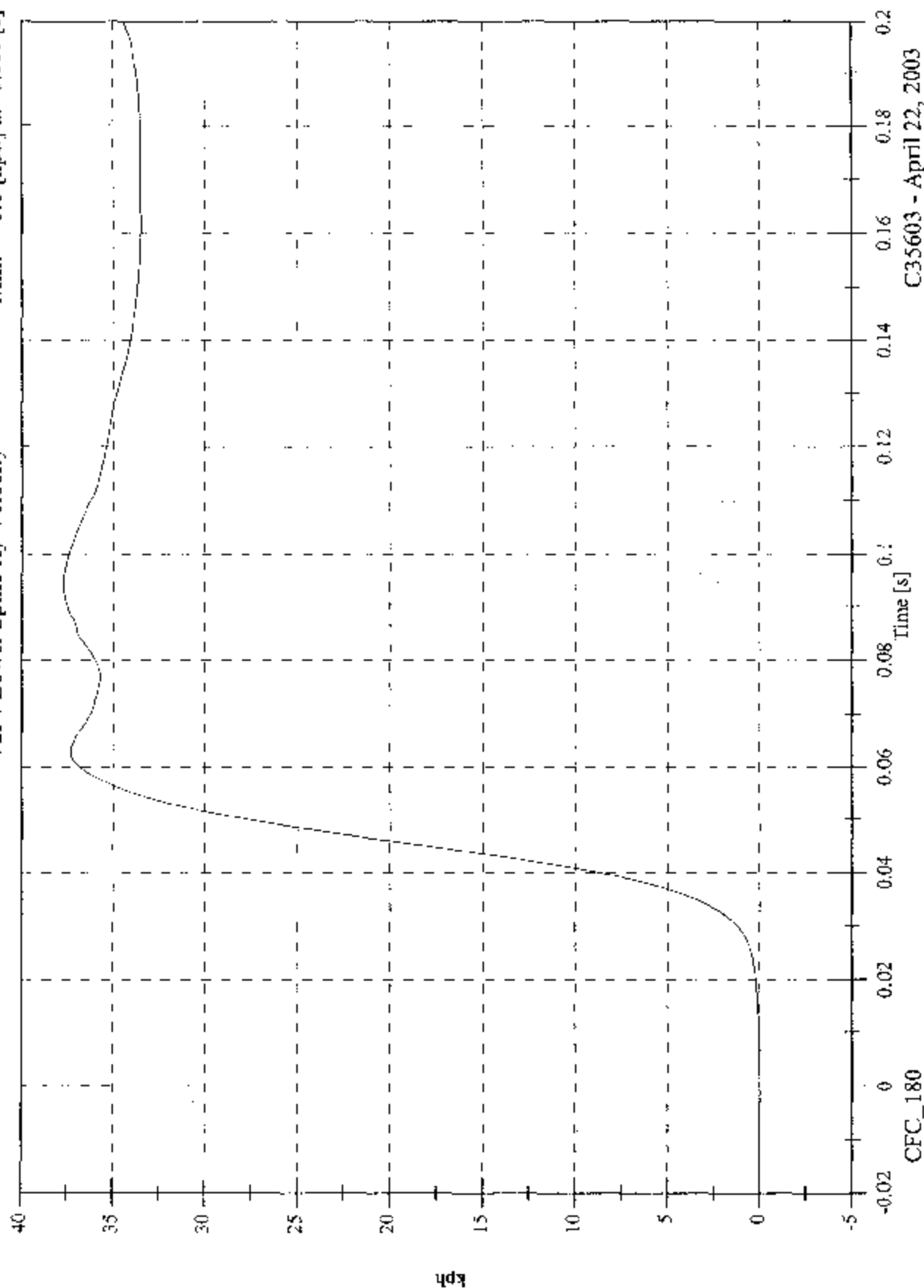


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 37.7 [kph] at 0.094 [s]
 Min: -0.0 [kph] at -0.018 [s]

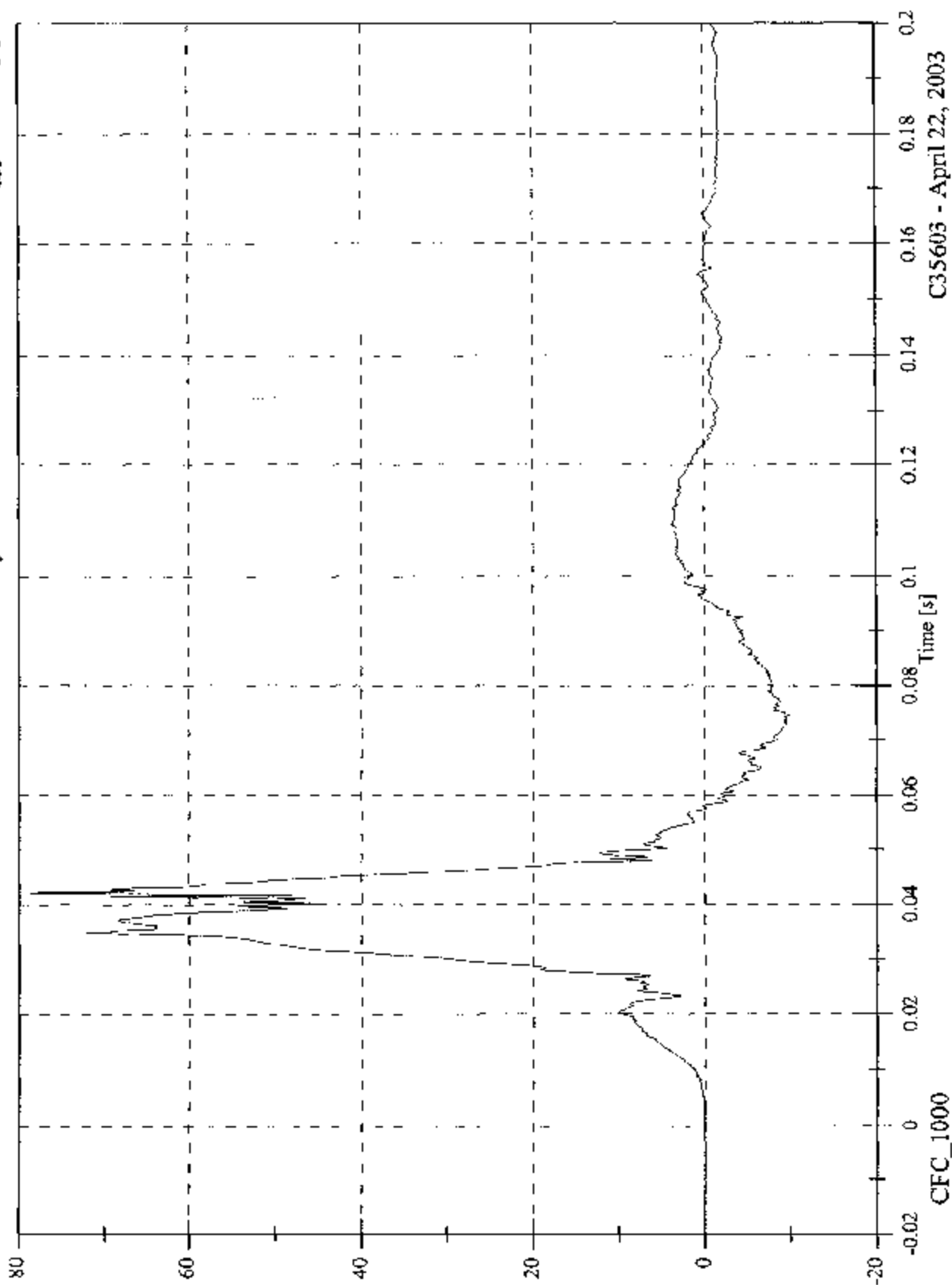
V2P4 Lower Spine Ry Velocity



FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Pelvic Ry

Max: 78.7 [g] at 0.042 [s]
Min: -10.0 [g] at 0.075 [s]

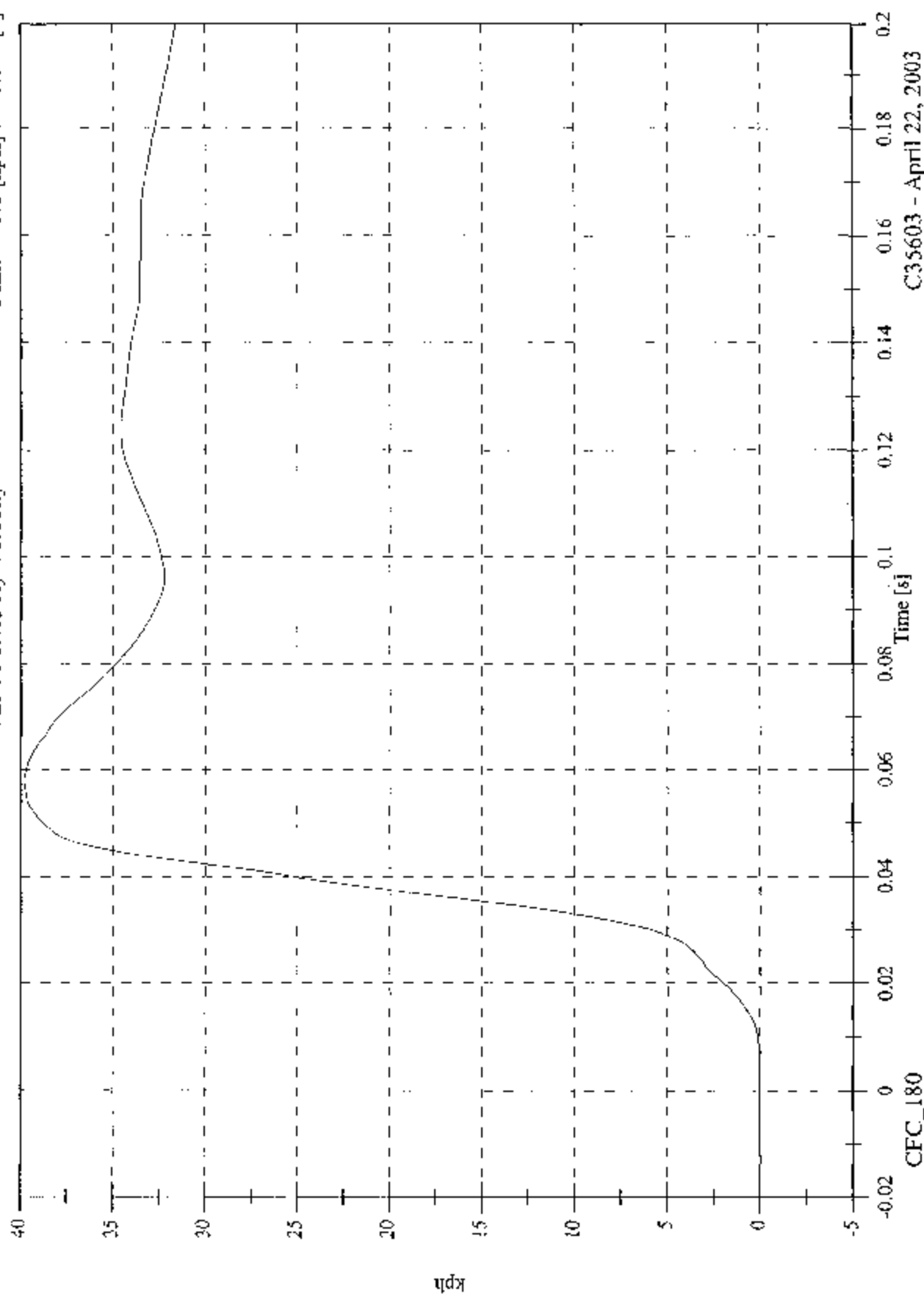


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Pelvic Ry Velocity

Max: 39.8 [kph] at 0.058 [s]
Min: -0.0 [kph] at -0.020 [s]

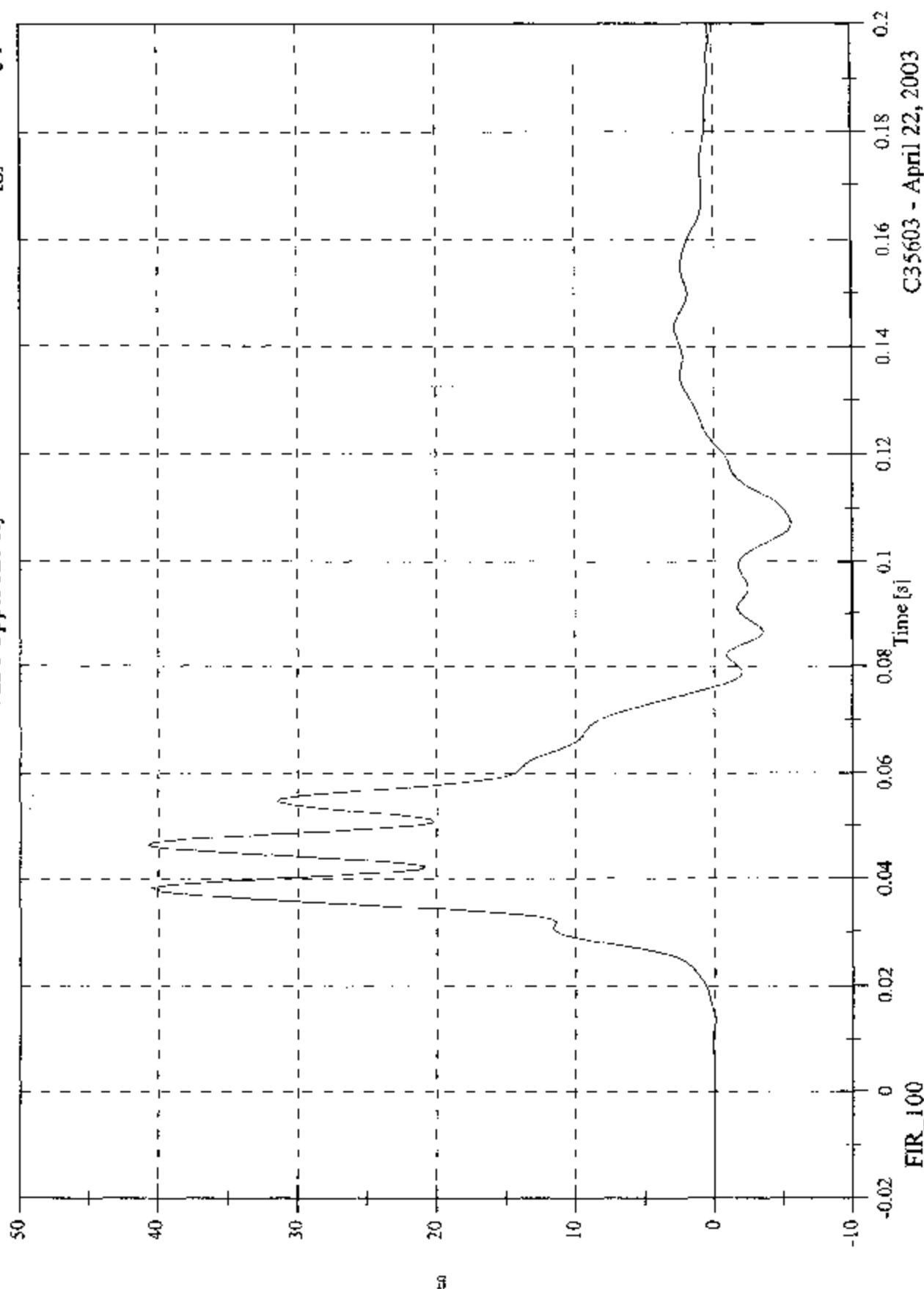


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Upper Rib Ry

Max: 40.7 [g] at 0.046 [s]
Min: -5.6 [g] at 0.107 [s]

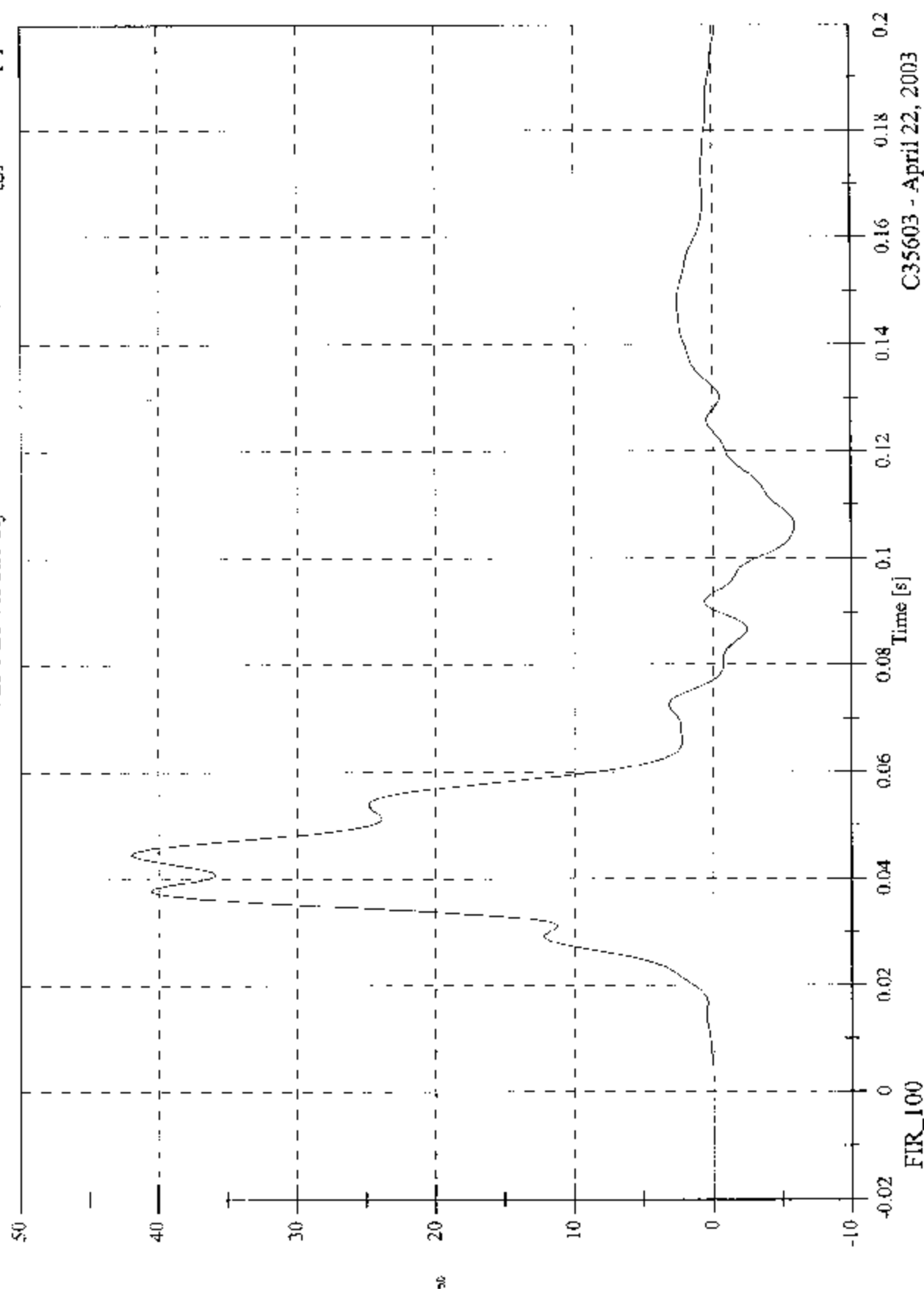


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2PI Lower Rib Ry

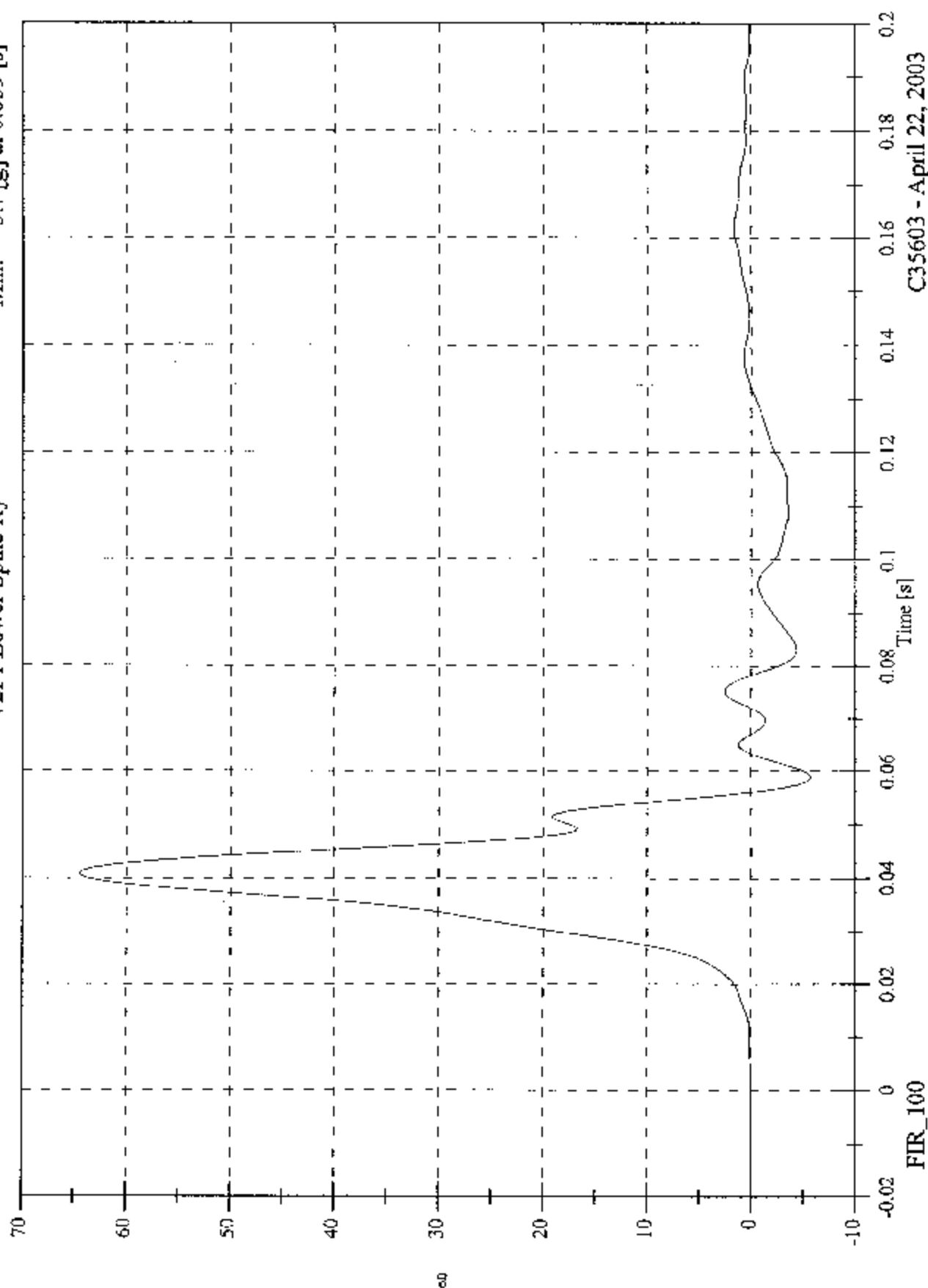
Max: 42.0 [g] at 0.044 [s]
Min: -5.9 [g] at 0.106 [s]



FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P1 Lower Spine Ry

Max: 64.5 [g] at 0.041 [s]
Min: -5.7 [g] at 0.059 [s]

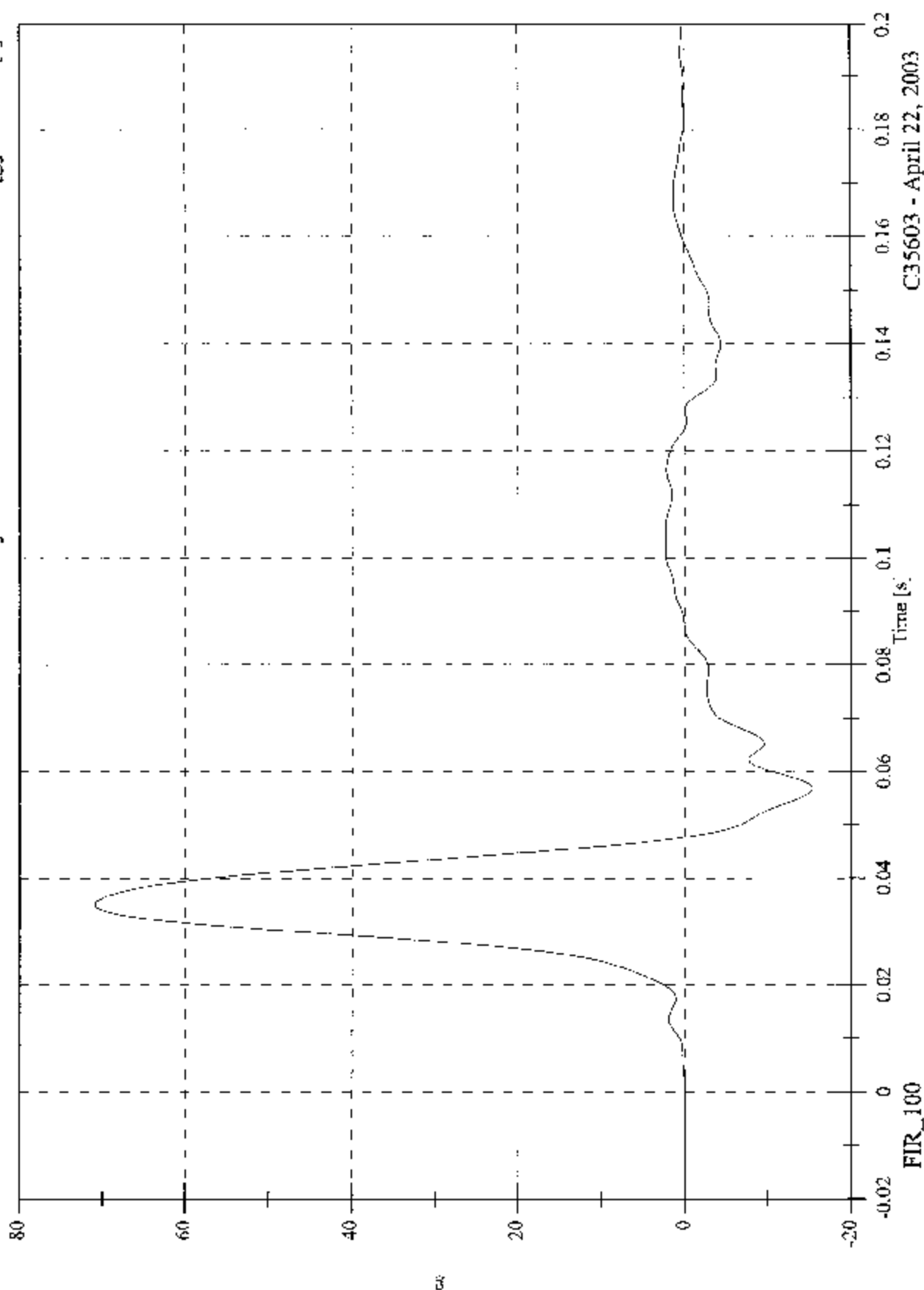


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

Max: 70.9 [g] at 0.035 [s]
 Min: -15.4 [g] at 0.057 [s]

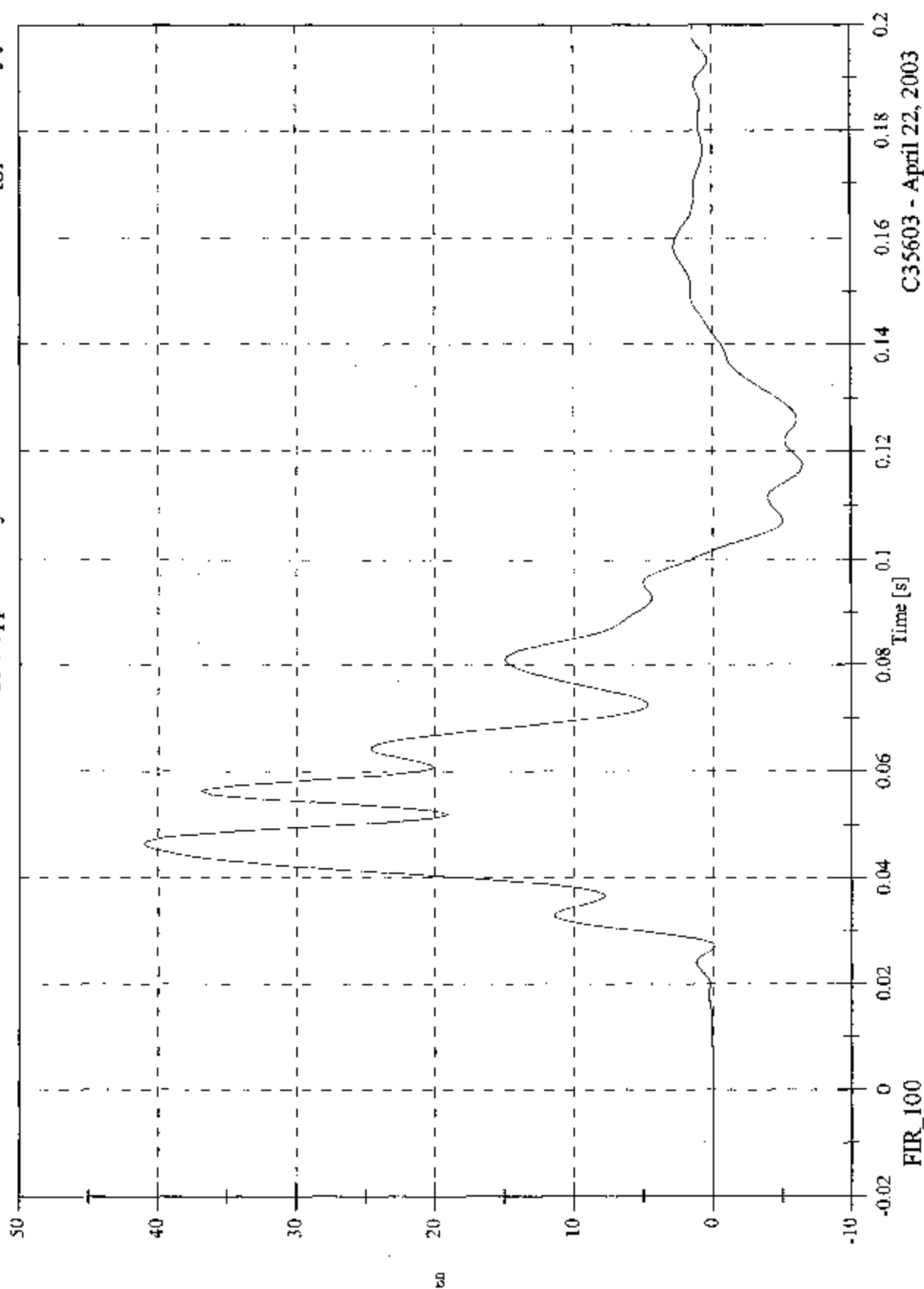
V2P1 Pelvic Ry



FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Upper Rib Ry

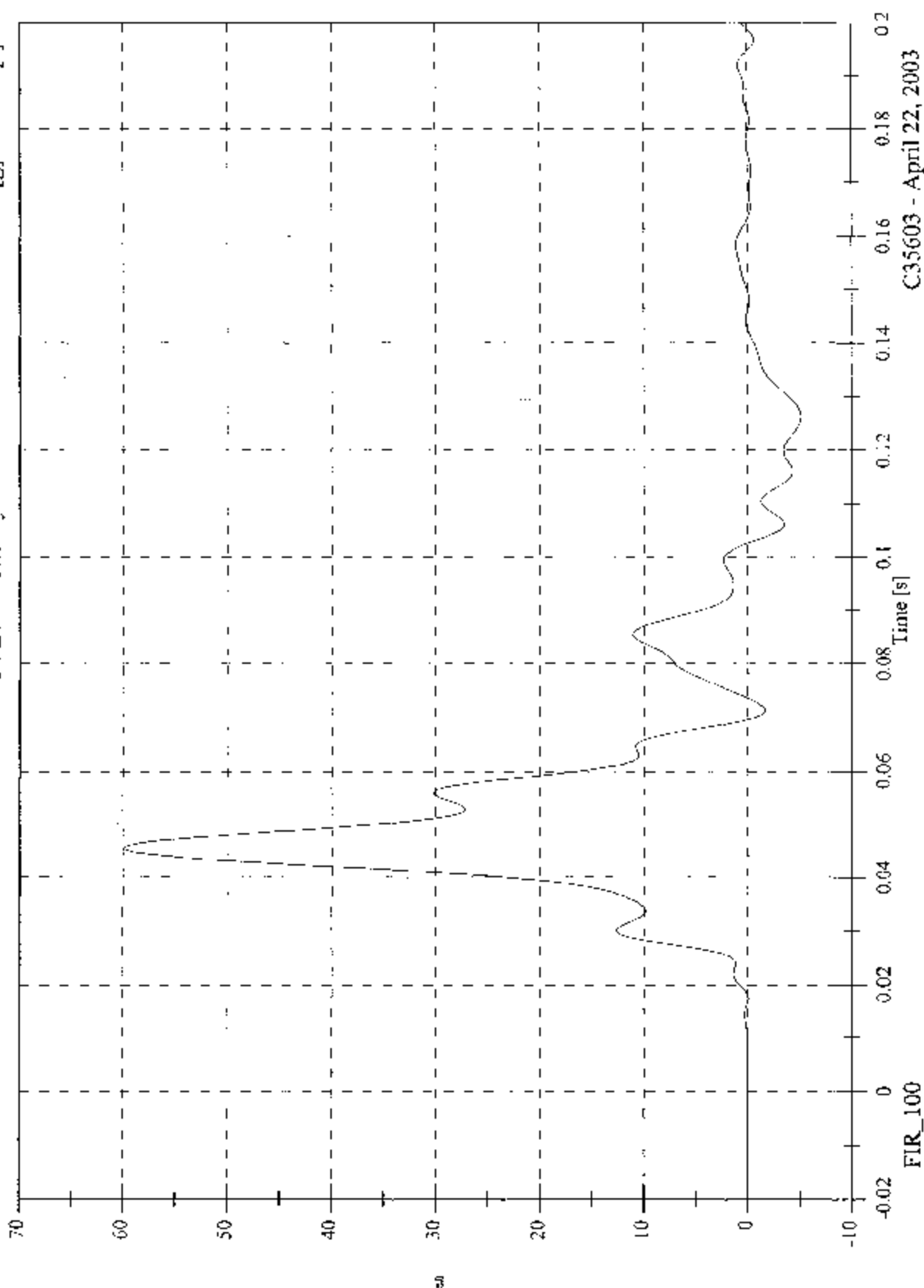
Max: 41.0 [g] at 0.046 [s]
Min: -6.5 [g] at 0.117 [s]



FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Lower Rib Ry

Max: 60.0 [g] at 0.046 [s]
Min: -5.0 [g] at 0.126 [s]

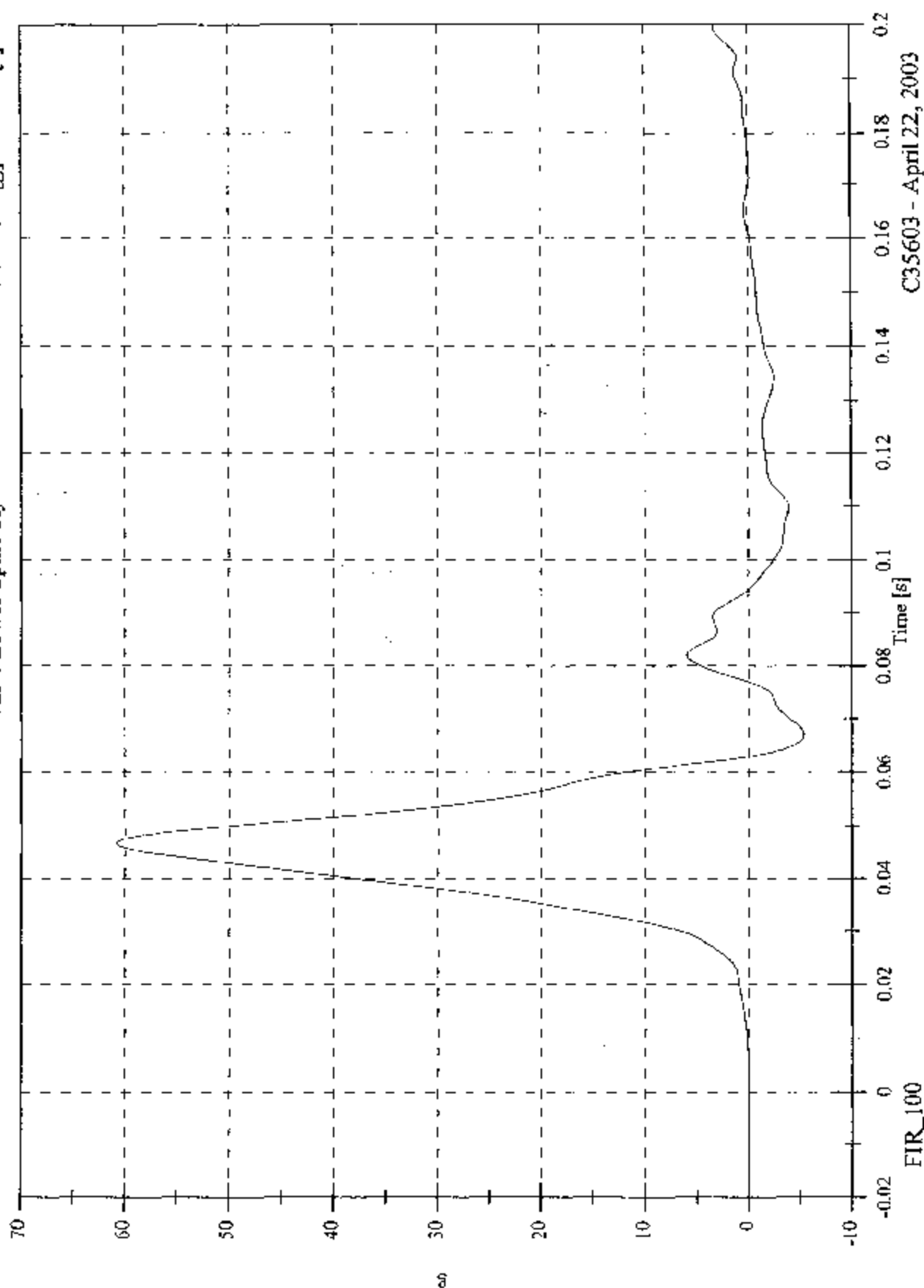


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Lower Spine Ry

Max: 60.8 [g] at 0.047 [s]
Min: -5.4 [g] at 0.067 [s]

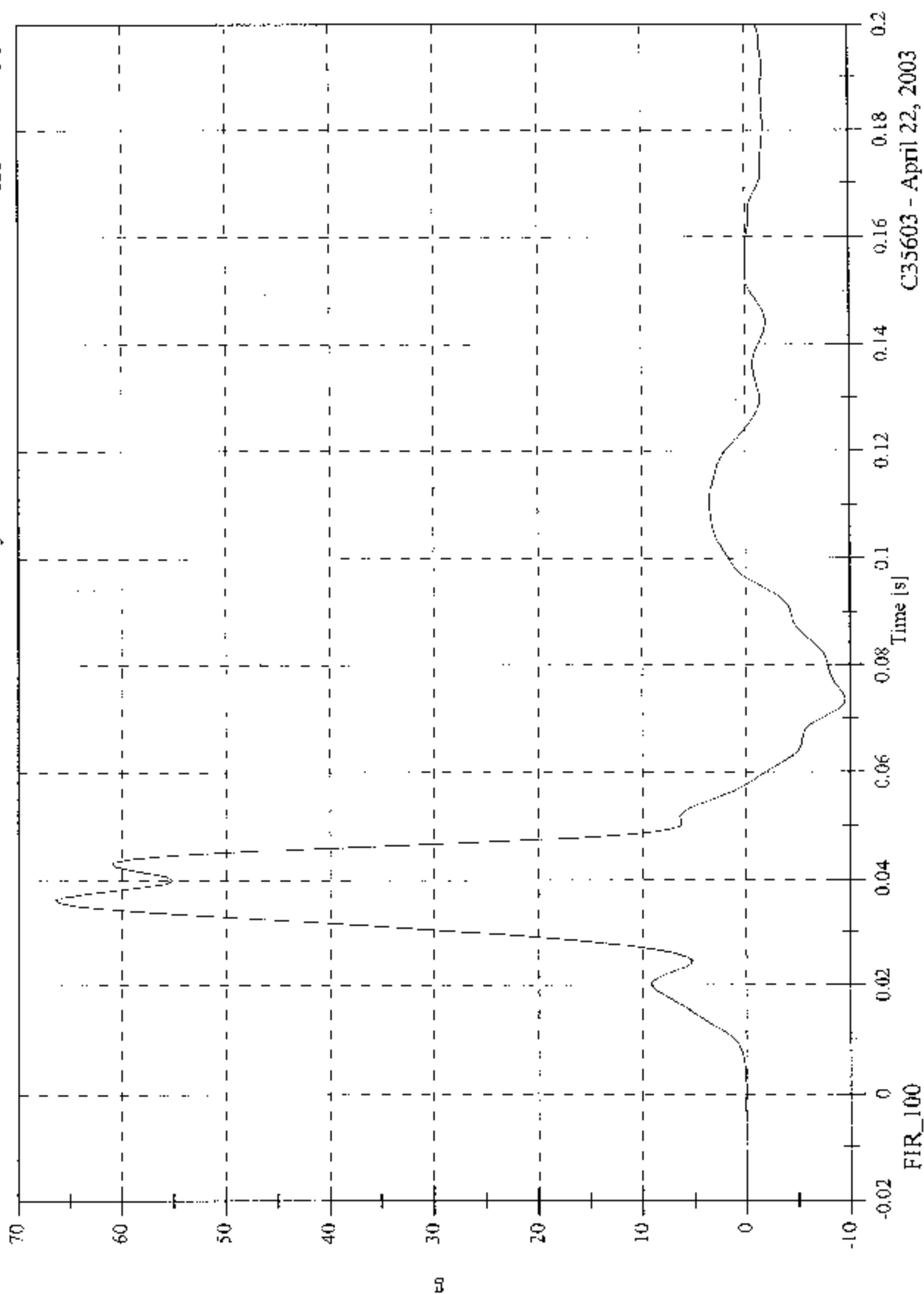


C35603 - April 22, 2003

FMVSS 214D Indicant - 2003 Mitsubishi Outlander

V2P4 Pelvic Ry

Max: 66.4 [g] at 0.036 [s]
Min: -9.6 [g] at 0.074 [s]



C35603 - April 22, 2003

APPENDIX C

SID HYBRID III CONFIGURATION AND PERFORMANCE VERIFICATION DATA

SUMMARY
SID H3 PRE & POST TEST CALIBRATION
CONFIGURED FOR LEFT SIDE IMPACT

Date: April 17, 2003; April 18, 2003

Sequential Test Number:

1.5; 1.5

Laboratory Technician:

D. Swiecicki

| TEST PARAMETER | SPECIFICATION | SID H3 015 NO. | | SID H3 016 NO. | |
|------------------------------------|---------------|-------------------|--------------|-------------------|--------------|
| | | PRE TEST | POST TEST | PRE TEST | POST TEST |
| SH- Seated Height (mm) | 889 - 909 | 902 | 902 | 899 | 902 |
| RH- Rib Height (mm) | 501 - 521 | 511 | 511 | 513 | 513 |
| HP- Hip Pivot Height (mm) | 99 ref. | 99 | 99 | 99 | 99 |
| RD- Rib from Back Line (mm) | 229 - 241 | 239 | 239 | 239 | 239 |
| KV- Knee Pivot from Back Line (mm) | 511 - 526 | 521 | 521 | 521 | 521 |
| SW- Knee Pivot to Floor (mm) | 490 - 505 | 495 | 495 | 495 | 495 |
| HW- Hip Width (mm) | 356 - 391 | 371 | 371 | 368 | 371 |
| THORAX IMPACTS | | | | | |
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 | 21.1 | 21.1 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 33 | 31 | 35 | 31 |
| PROBE SPEED (m/s) | 4.27 - 4.33 | 4.32 | 4.28 | 4.27 | 4.27 |
| UPPER RIB (g's) | 37 - 46 | 40.23 | 37.31 | 45.95 | 44.48 |
| LOWER RIB (g's) | 37 - 46 | 40.05 | 37.07 | 41.51 | 38.86 |
| LOWER SPINE (g's) | 15 - 22 | 20.25 | 18.65 | 21.93 | 21.43 |
| PELVIS IMPACT | | | | | |
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 | 21.1 | 21.1 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 33 | 31 | 35 | 31 |
| PROBE SPEED (m/s) | 4.27 - 4.33 | 4.29 | 4.28 | 4.28 | 4.3 |
| PELVIS (g's) | 40 - 60 | 40.64 | 43.04 | 47.79 | 41.28 |

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

SID H3 NO.: 015

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015 Sequential Test Number: 1
Date: April 17, 2003 Laboratory Technician: B. Swiecicki

| TEST | COMMENTS |
|------------------------------|--------------------------|
| EXTERNAL DIMENSIONS | Passed all requirements. |
| THORACIC SHOCK ABSORBER TEST | Passed all requirements. |
| LATERAL THORAX IMPACT TEST | Passed all requirements. |
| LATERAL PELVIS IMPACT TEST | Passed all requirements. |
| HEAD DROP TEST* | Passed all requirements. |
| LATERAL NECK BEND TEST* | Passed all requirements. |
| ABDOMINAL COMPRESSION TEST* | Passed all requirements. |
| LUMBAR FLEXION TEST* | Passed all requirements. |

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

STD H3 Serial No.: 015 Sequential Test Number: 1
 Date: April 17, 2003 Laboratory Technician: B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|------------------------------------|---------------|--------------|
| SH- Seated Height (mm) | 889 – 909 | 902 |
| RH- Rib Height (mm) | 502 – 520 | 511 |
| HP- Hip Pivot Height (mm) | 99 ref. | 99 |
| RD- Rib from Back Line (mm) | 229 – 241 | 239 |
| KH- Knee Pivot from Back Line (mm) | 511 – 526 | 521 |
| KV- Knee Pivot to Floor (mm) | 490 – 505 | 495 |
| HW- Hip Width (mm) | 356 – 391 | 371 |

REMARKS: None

**THORACIC SHOCK ABSORBER TESTS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015 Sequential Test Number: 5
 Date: February 3, 2003 Laboratory Technician: B. Swiecicki

DAMPER IDENTIFICATION: 015

| TEST PARAMETER | | SPECIFICATION | TEST RESULTS |
|-----------------------|-------------------|---------------|--------------|
| TEMPERATURE (°C) | | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | | 10 - 70 | 29.00 |
| VELOCITY 3.05 m/s | FORCE (N) | 836 - 1125 | 1122.40 |
| | DISPLACEMENT (mm) | 30 - 35 | 30.16 |
| VELOCITY 4.27 m/s | FORCE (N) | 1730 - 2099 | 2063.48 |
| | DISPLACEMENT (mm) | 32 - 37 | 35.62 |
| VELOCITY 6.10 m/s | FORCE (N) | 3741 - 4448 | 4399.67 |
| | DISPLACEMENT (mm) | 33 - 40 | 38.49 |

DAMPER SETTING: 5

REMARKS: None

015 Shock Low at 3.05 m/s

Low Part 572F Shock Absorber Impact

Calibration Date: 02-03-03

Serial No: 015

Work File: 015SL 2-03-03

-----TEST RESULTS-----

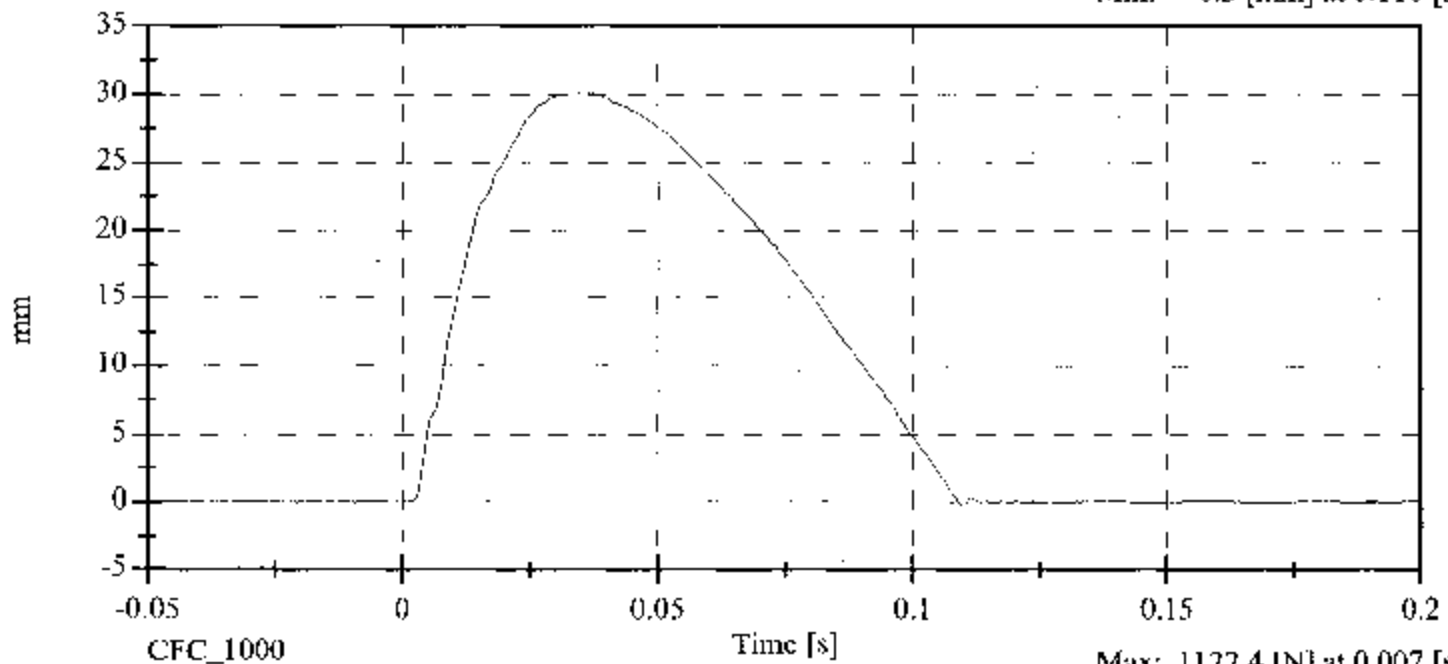
| TEST CONDITION | PARAMETERS | RESULTS | STATUS |
|------------------|------------------|-----------|--------|
| Lab Temperature: | 18.9-25.5 C | 21.1 C | Passed |
| Lab Humidity: | 10-70 % | 29.00 % | Passed |
| Displacement: | 30.00-35.00 mm | 30.16 mm | Passed |
| Maximum Force: | 836.00-1125.00 N | 1122.40 N | Passed |

015 Shock Low

Displacement vs. Time

Max: 30.2 [mm] at 0.035 [s]

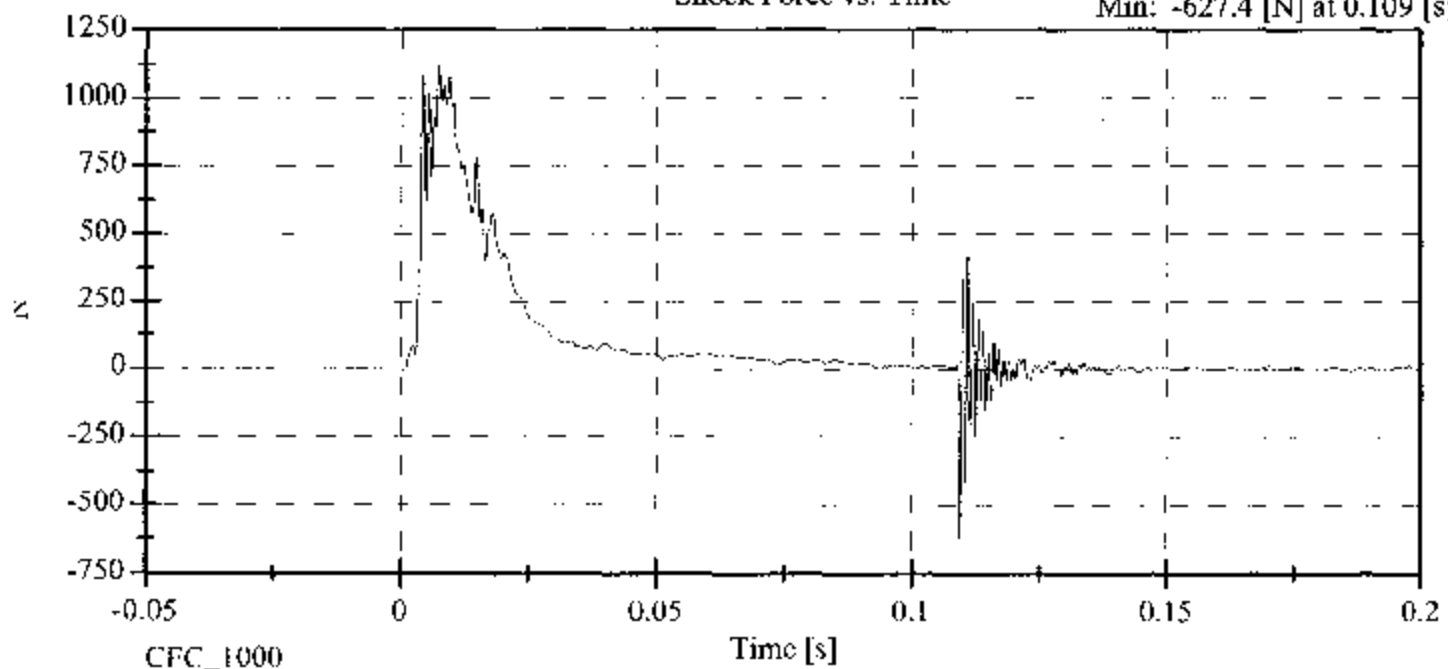
Min: -0.3 [mm] at 0.110 [s]



Shock Force vs. Time

Max: 1122.4 [N] at 0.007 [s]

Min: -627.4 [N] at 0.109 [s]



015 Shock Medium at 4.27 m/s

Medium Part 572F Shock Absorber Impact

Calibration Date:

02-03-03

Serial No:

015

Work File:

015SM1 2-03-03

TEST RESULTS

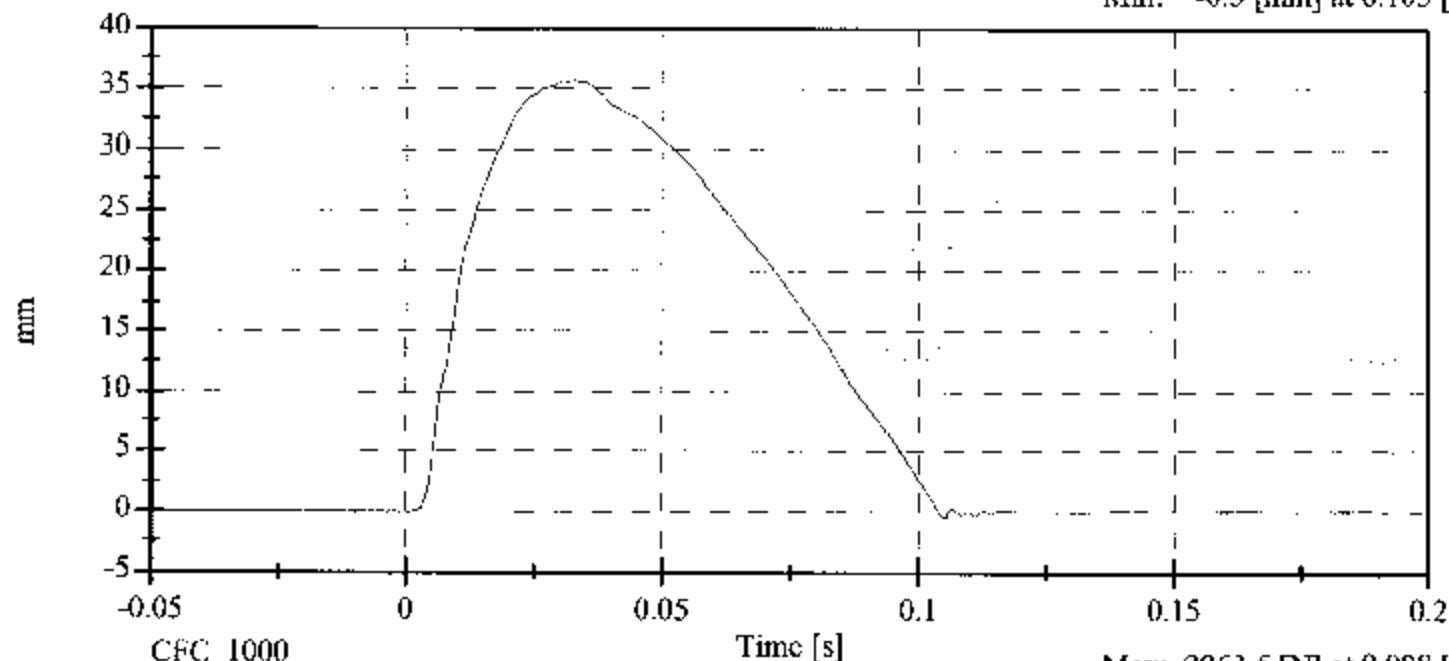
| TEST CONDITION | PARAMETERS | RESULTS | STATUS |
|------------------|-------------------|-----------|--------|
| Lab Temperature: | 18.9-25.5 C | 21.1 C | Passed |
| Lab Humidity: | 10-70 % | 29.00 % | Passed |
| Displacement: | 32.00-37.00 mm | 35.62 mm | Passed |
| Maximum Force: | 1730.00-2099.00 N | 2063.48 N | Passed |

015 Shock Medium

Displacement vs. Time

Max: 35.6 [mm] at 0.033 [s]

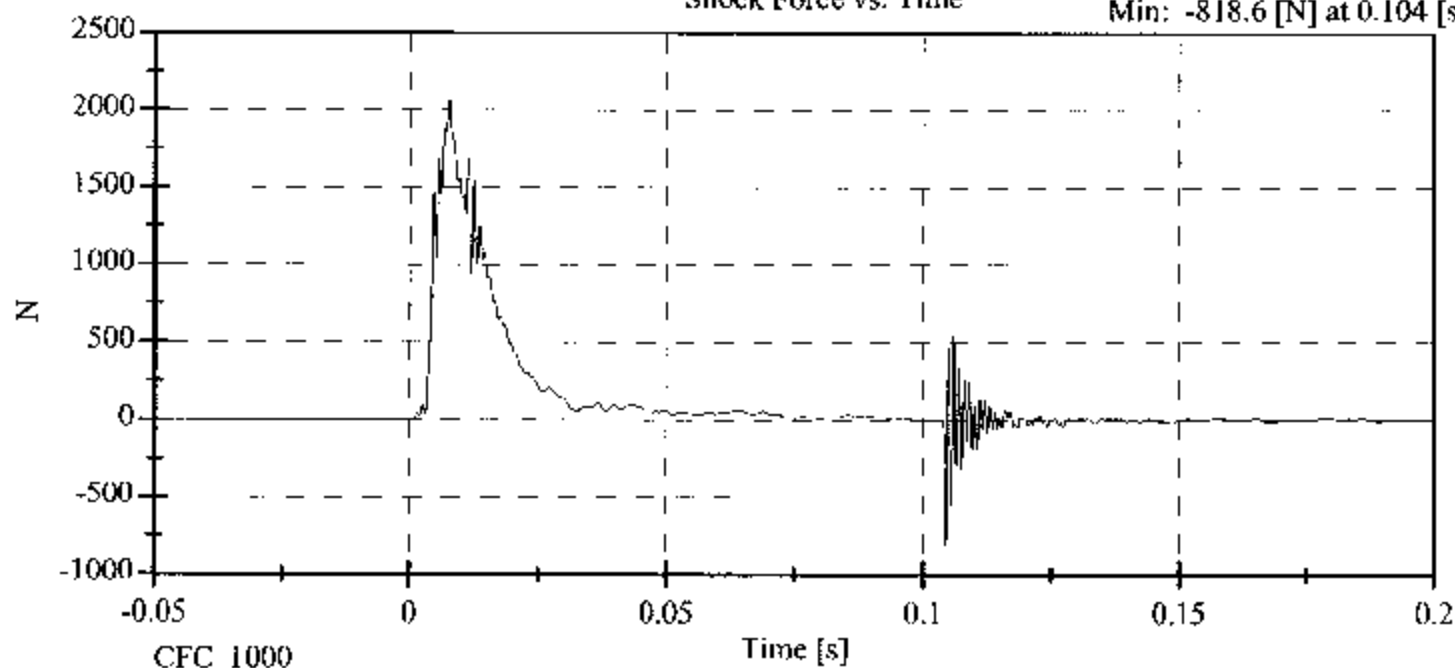
Min: -0.5 [mm] at 0.105 [s]



Shock Force vs. Time

Max: 2063.5 [N] at 0.008 [s]

Min: -818.6 [N] at 0.104 [s]



015 Shock High at 6.10 m/s

High Part 572F Shock Absorber Impact

Calibration Date:

02-03-03

Serial No: 015

Work File:

015SH 2-03-03

TEST RESULTS

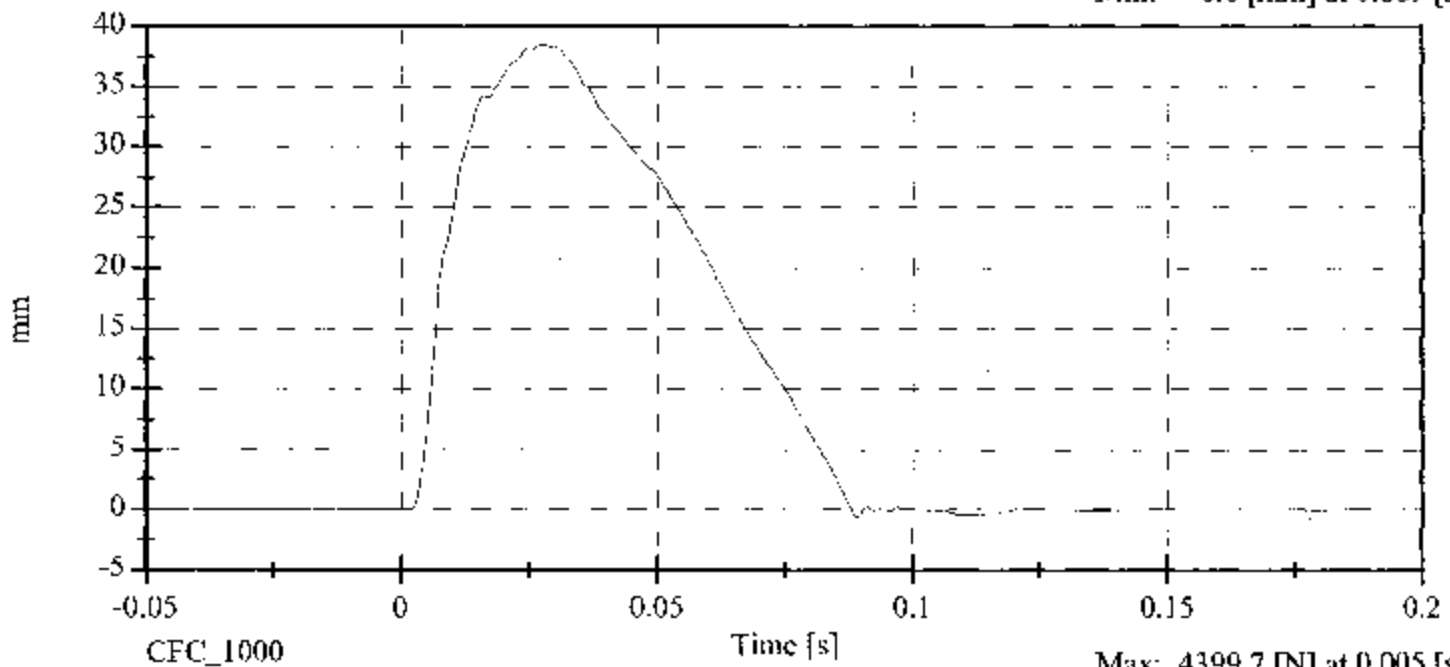
| TEST CONDITION | PARAMETERS | RESULTS | STATUS |
|------------------|-------------------|-----------|--------|
| Lab Temperature: | 18.9-25.5 C | 21.1 C | Passed |
| Lab Humidity: | 10-70 % | 29.00 % | Passed |
| Displacement: | 33.00-40.00 mm | 38.49 mm | Passed |
| Maximum Force: | 3741.00-4448.00 N | 4399.67 N | Passed |

015 Shock High

Displacement vs. Time

Max: 38.5 [mm] at 0.028 [s]

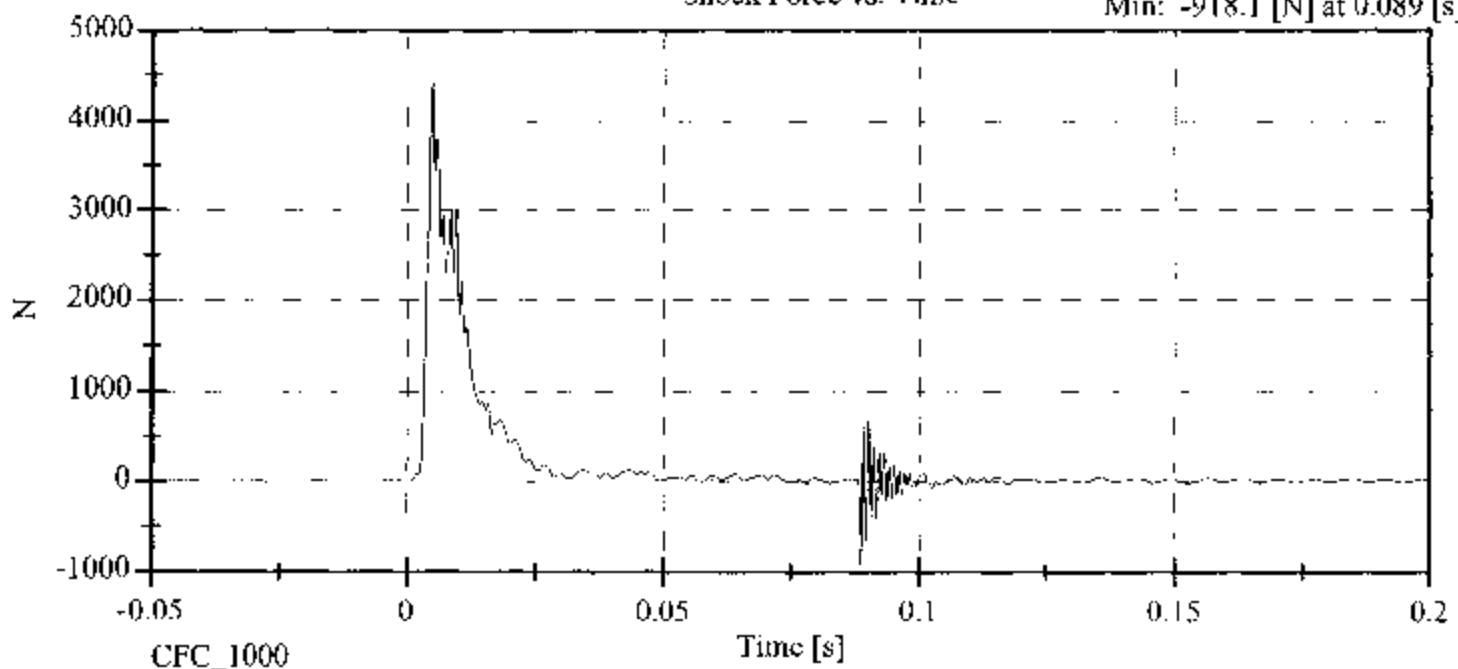
Min: -0.6 [mm] at 0.089 [s]



Shock Force vs. Time

Max: 4399.7 [N] at 0.005 [s]

Min: -918.1 [N] at 0.089 [s]



**LATERAL THORAX IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015

Sequential Test Number:

1

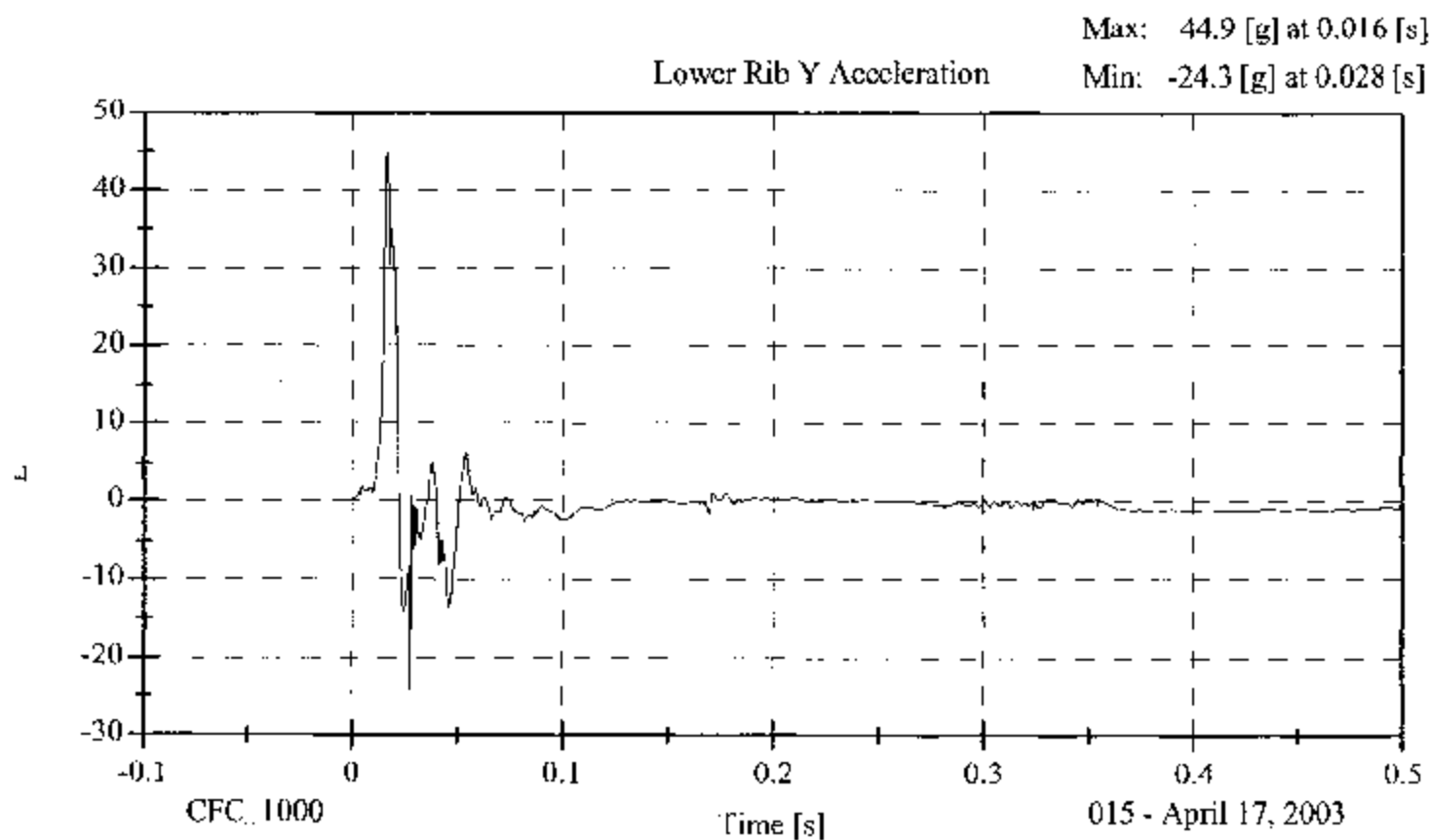
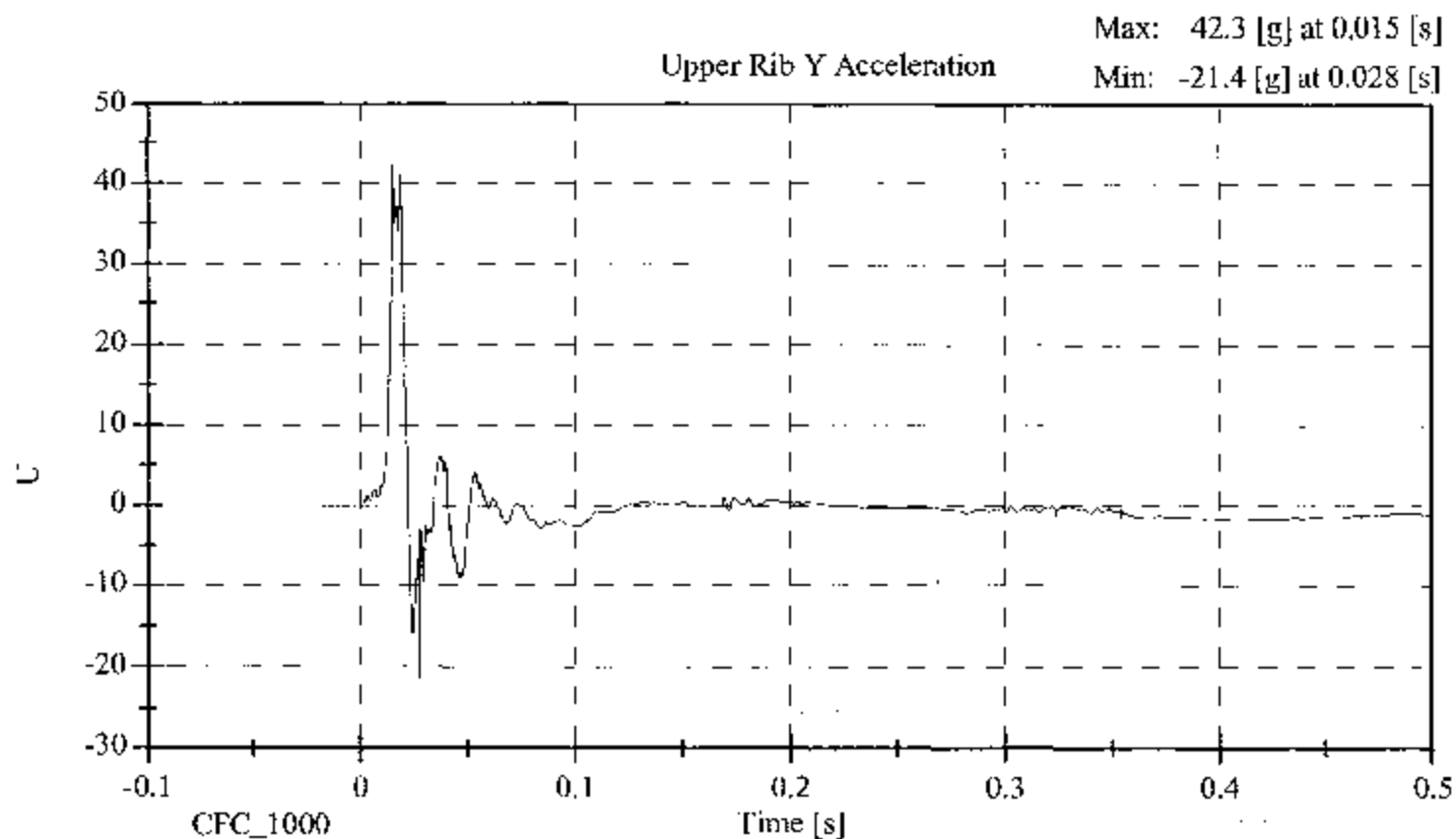
Date: April 17, 2003

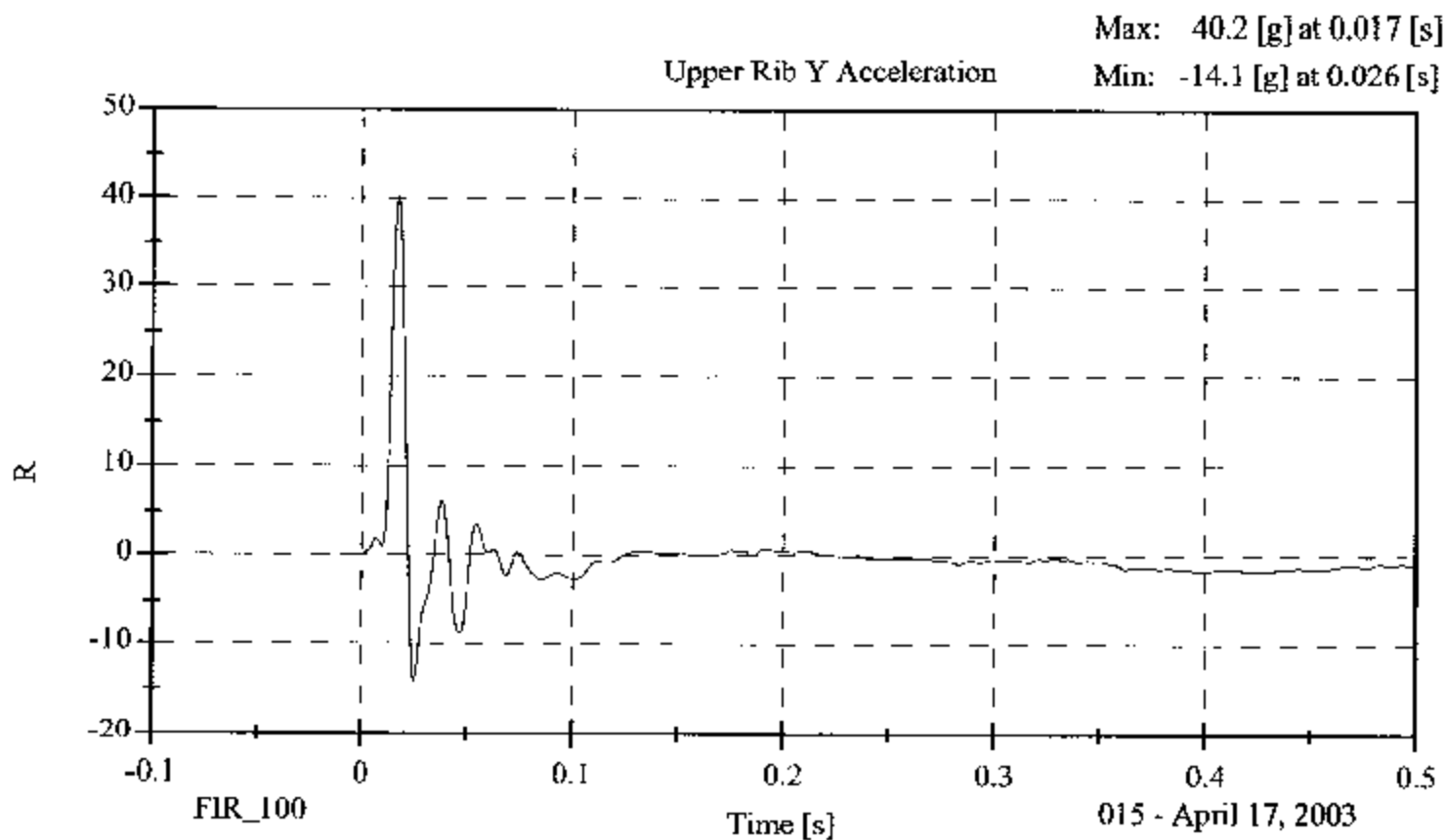
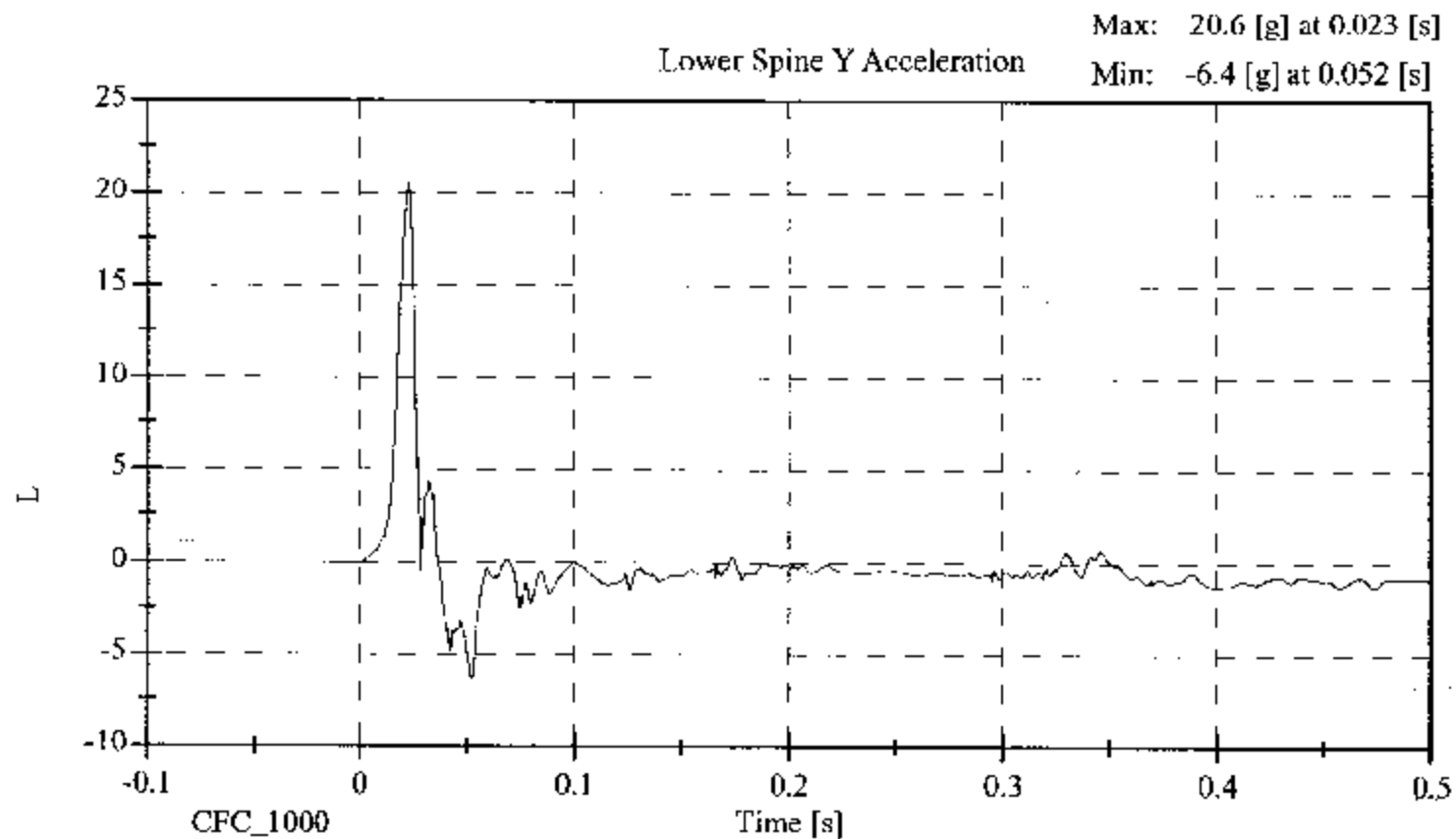
Laboratory Technician:

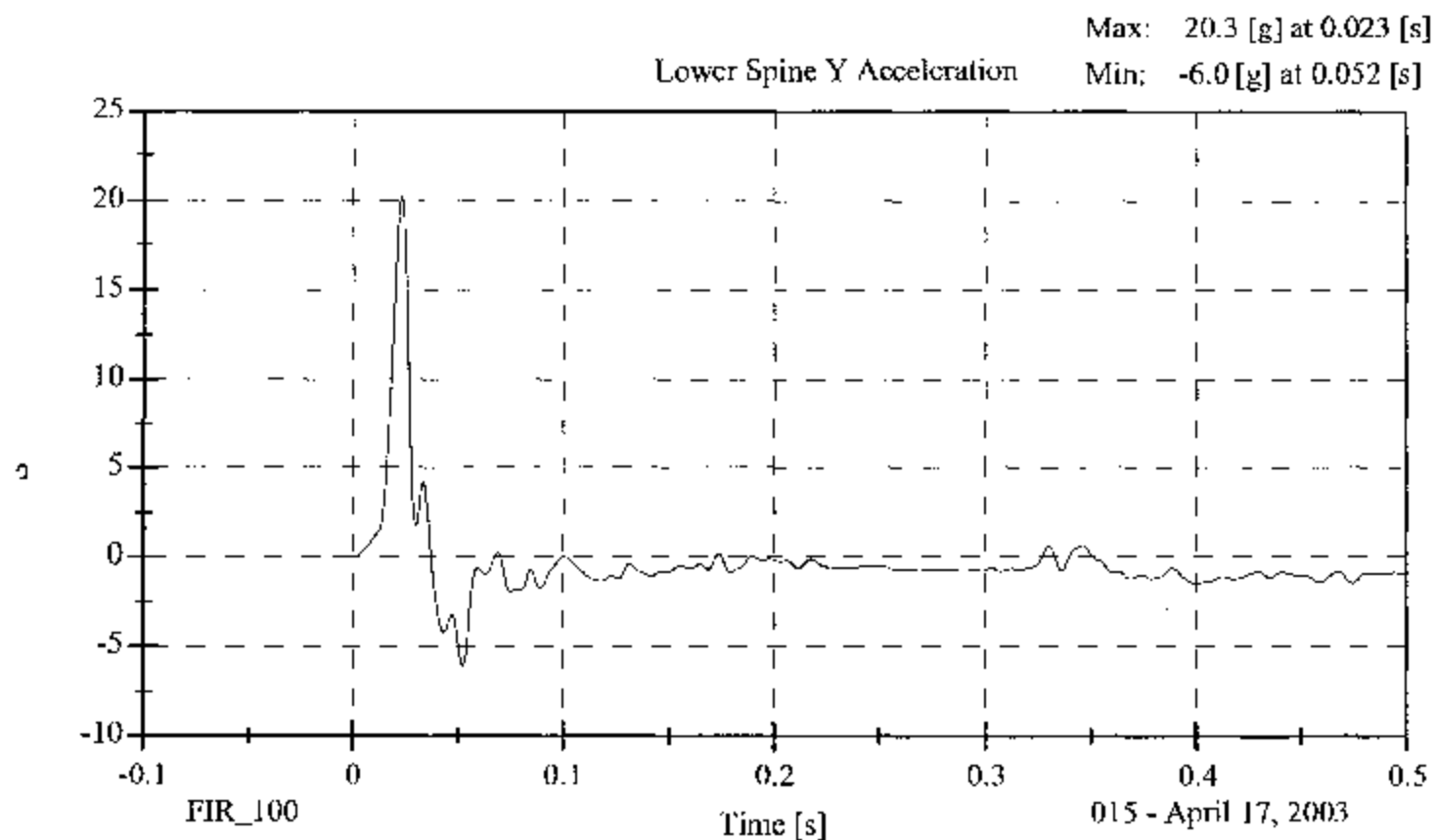
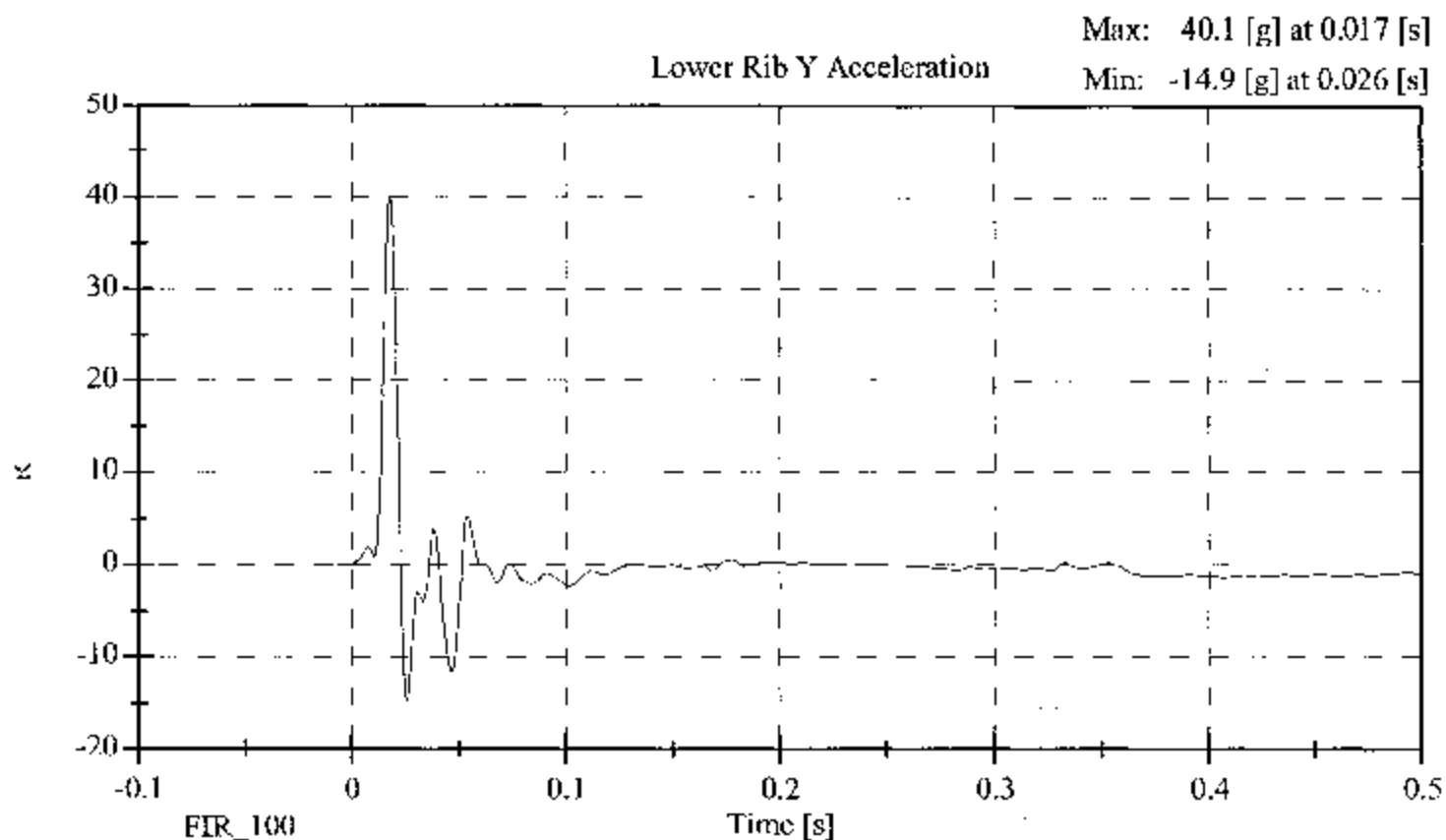
B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|-----------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 33.00 |
| PROBE SPEED (m/s) | 4.27 - 4.33 | 4.32 |
| UPPER RIB (g's) | 37 - 46 | 40.23 |
| LOWER RIB (g's) | 37 - 46 | 40.05 |
| LOWER SPINE (g's) | 15 - 22 | 20.25 |

REMARKS: None







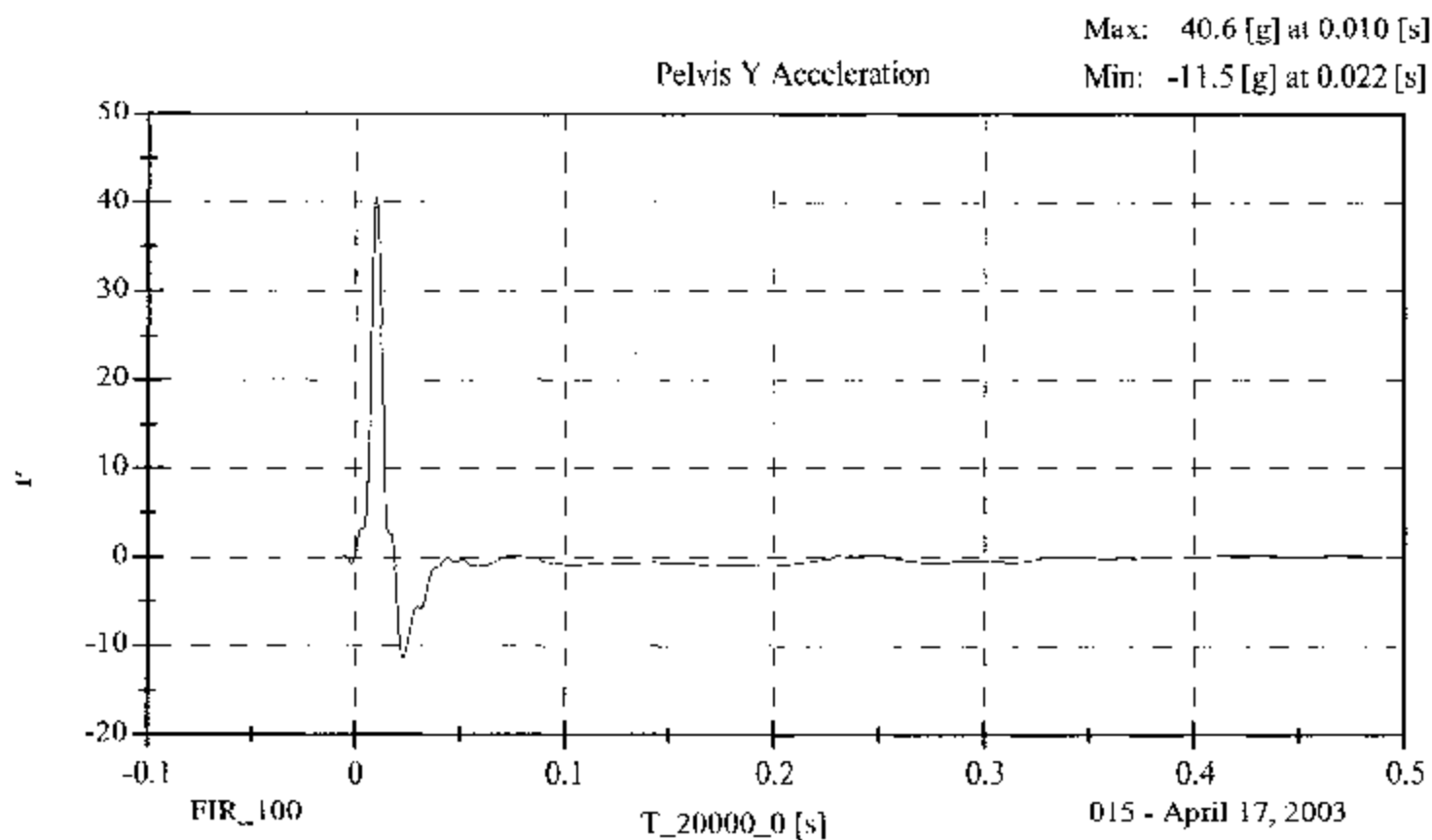
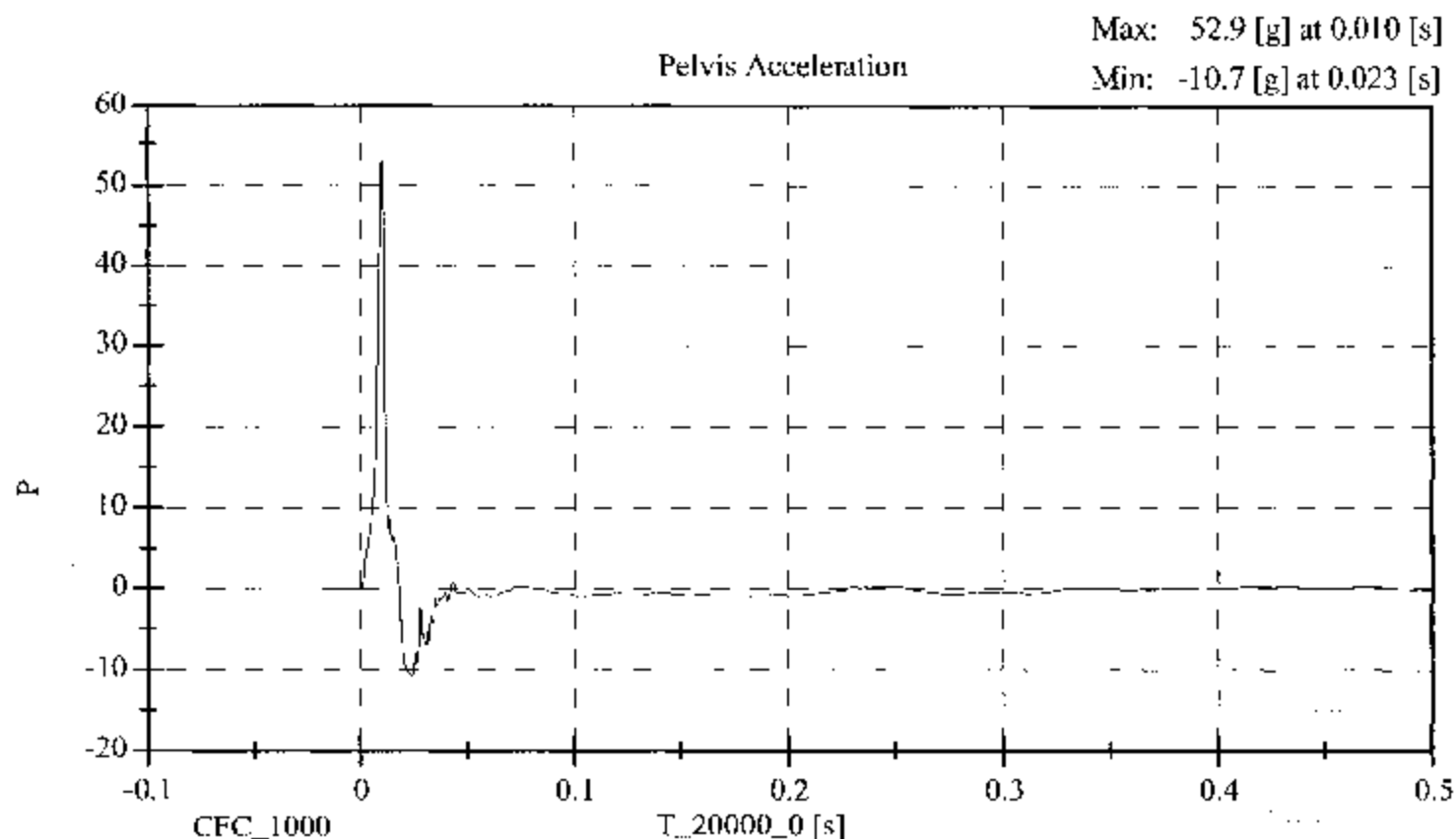
**LATERAL PELVIS IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

| | | |
|------------------------|-------------------------------------|--|
| SID H3 Serial No.: 015 | Sequential Test Number: 1 | |
| Date: April 17, 2003 | Laboratory Technician: B. Swiecicki | |

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|---------------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 33.00 |
| PROBE SPEED (m/s) | 4.27 - 4.33 | 4.29 |
| PELVIS ACCELERATION (g's) | 40 - 60 | 40.64 |

REMARKS: None



015 - April 17, 2003

HEAD DROP TEST
PRE-TEST
(Test not required for SID certification)

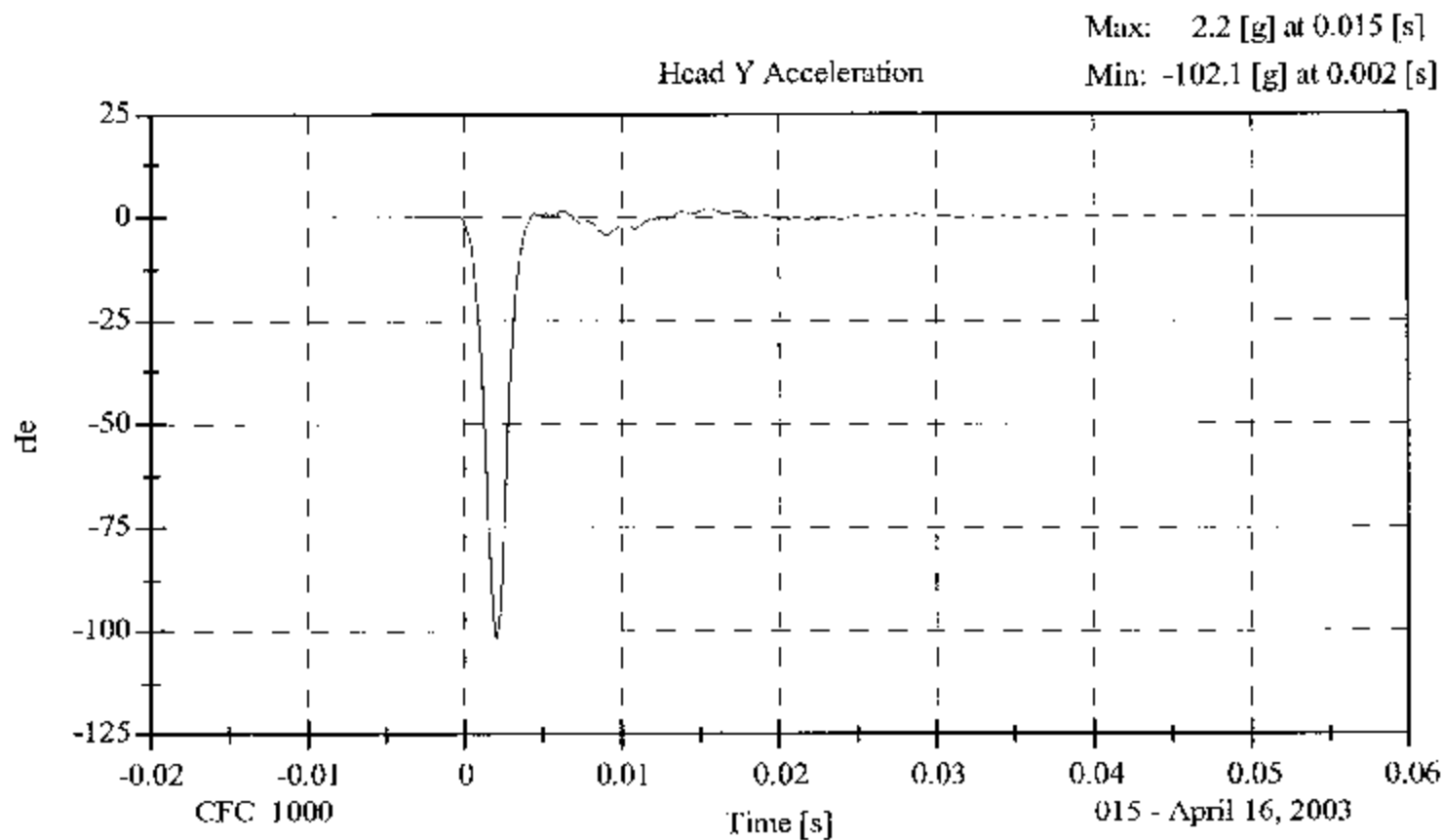
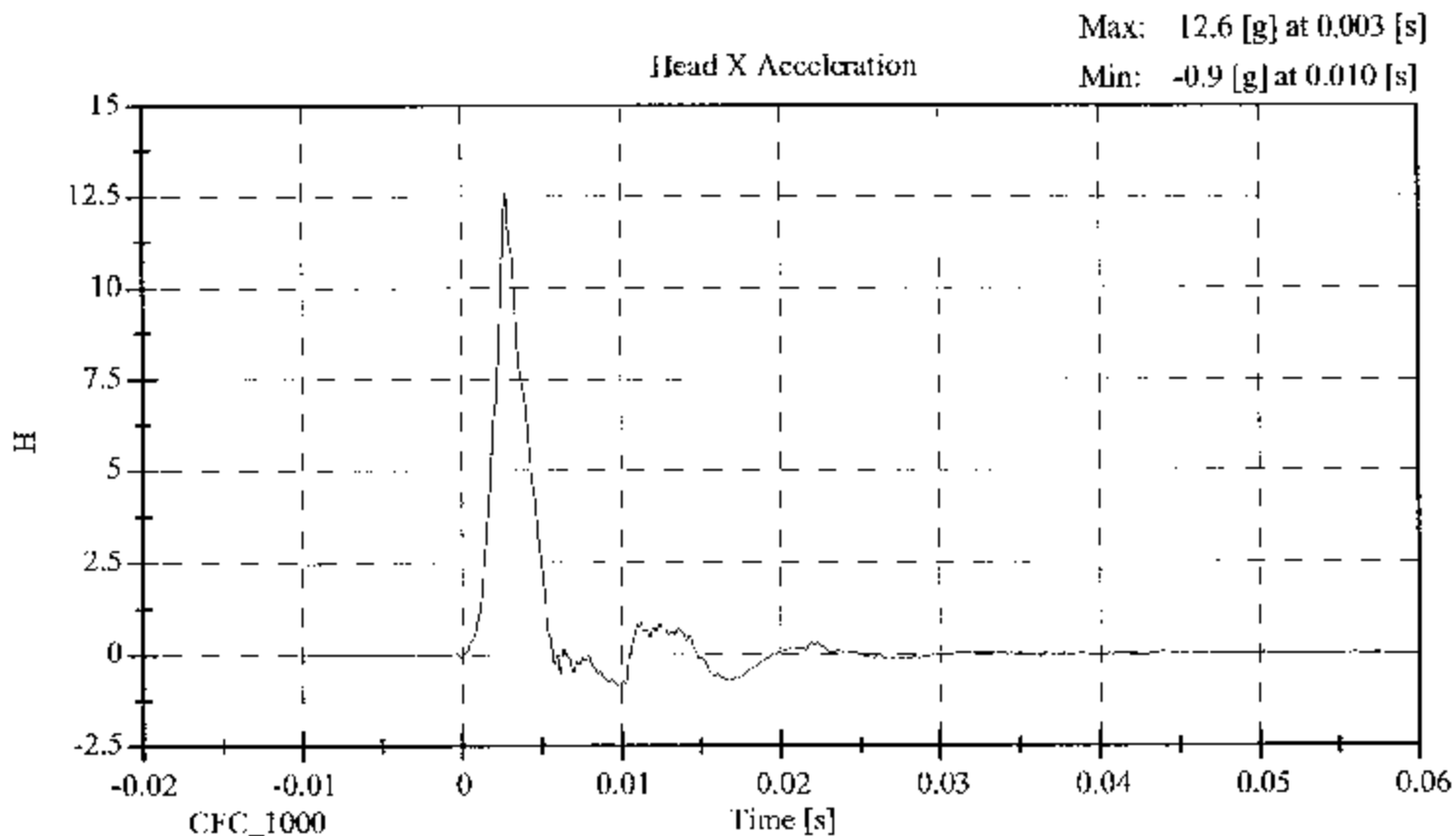
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: April 16, 2003 Laboratory Technician: B. Swiecicki

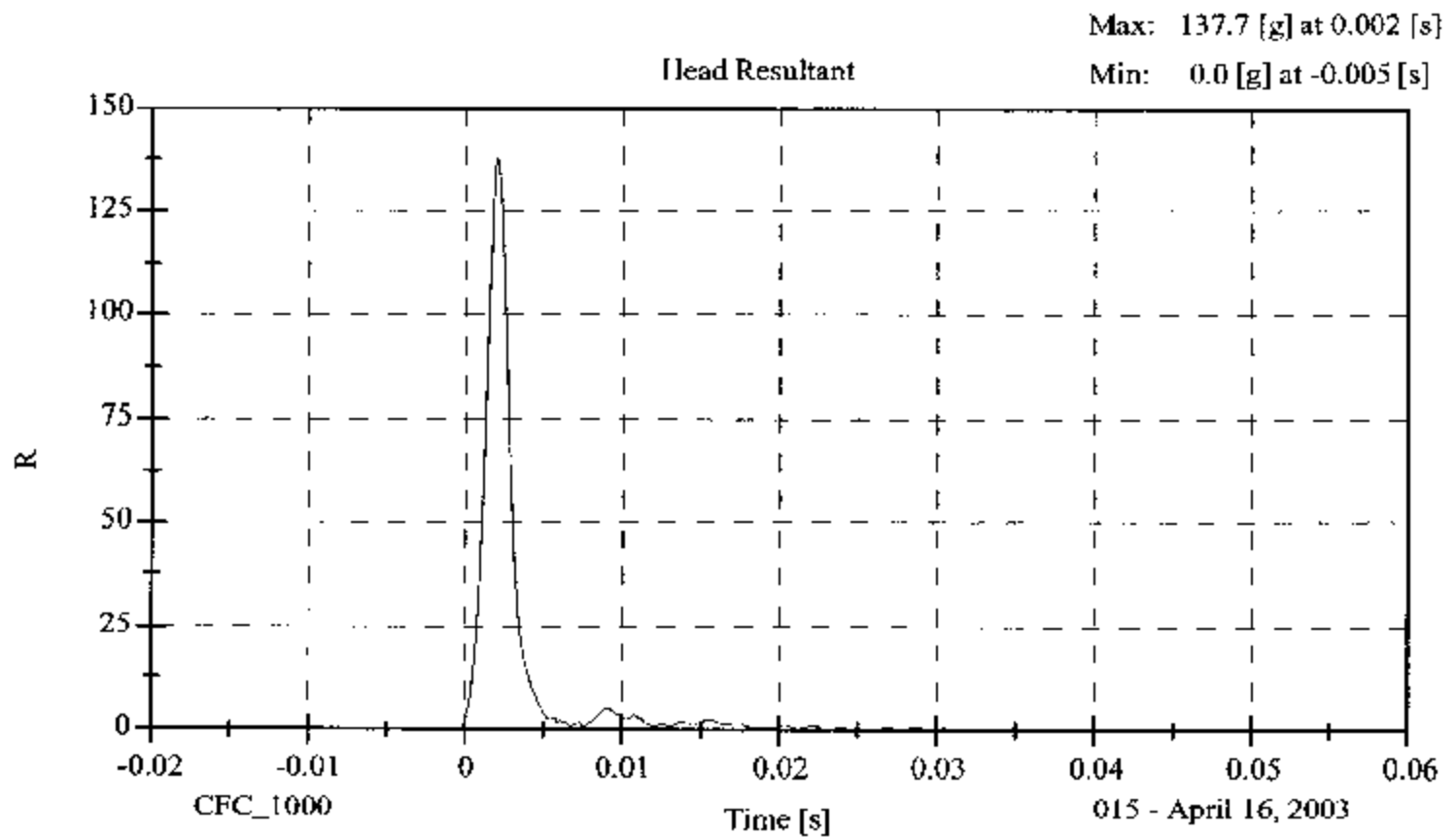
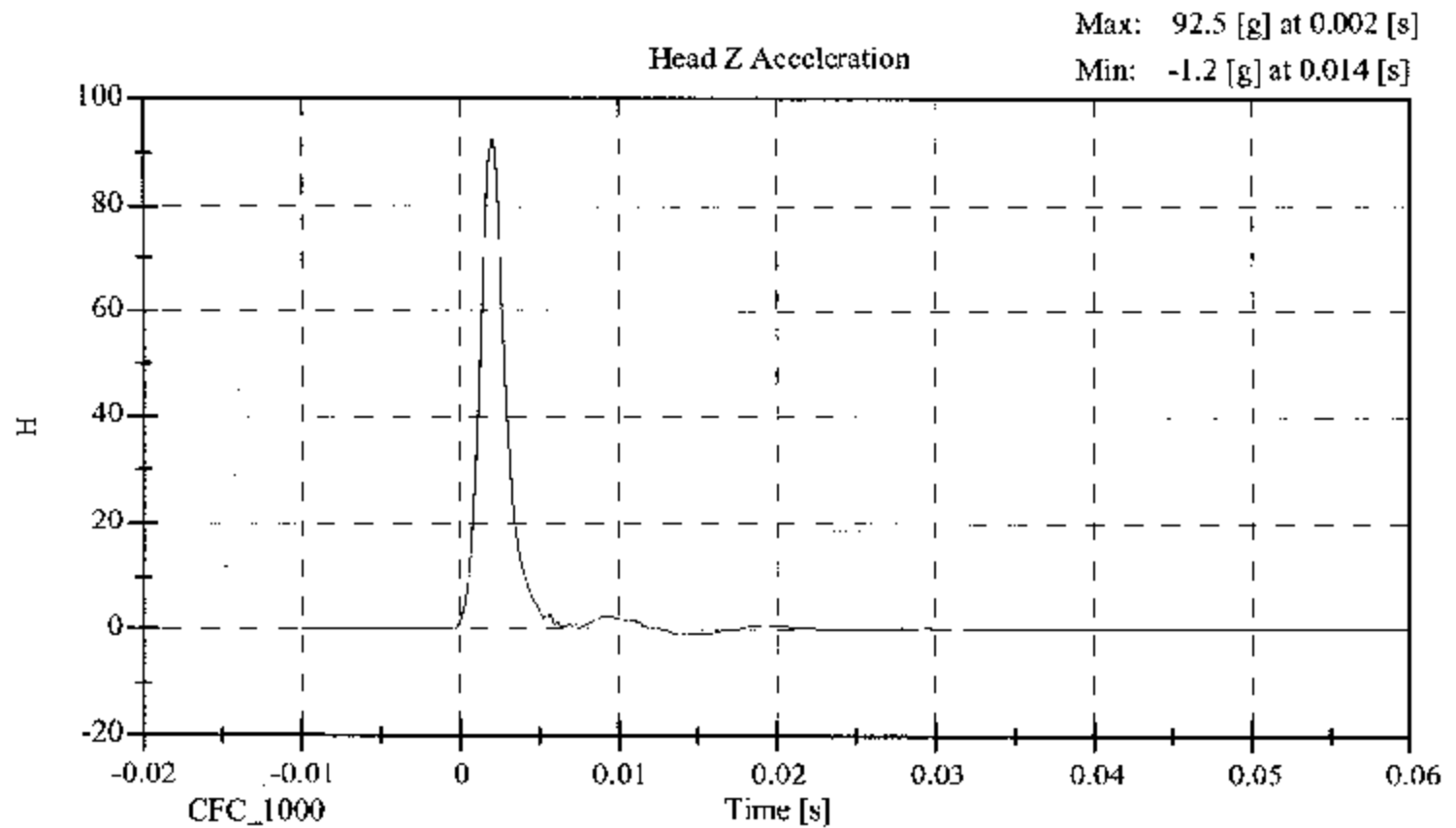
| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|----------------------------------|------------------|--------------|
| TEMPERATURE (°C) | 20.6 - 22.2 | 20.7 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 30.00 |
| PEAK RESULTANT ACCELERATION (Gs) | 120 - 150 | 137.68 |
| PEAK LATERAL ACCELERATION (Gs) | Not to Exceed 15 | 12.57 |
| CURVE PERCENT NONMODAL (%) | < 15 | 3.70 |

REMARKS: None

SID HYIII 9AAU Head Drop



015 - April 16, 2003



LATERAL NECK BENDING TEST**PRE-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015

Sequential Test Number:

1

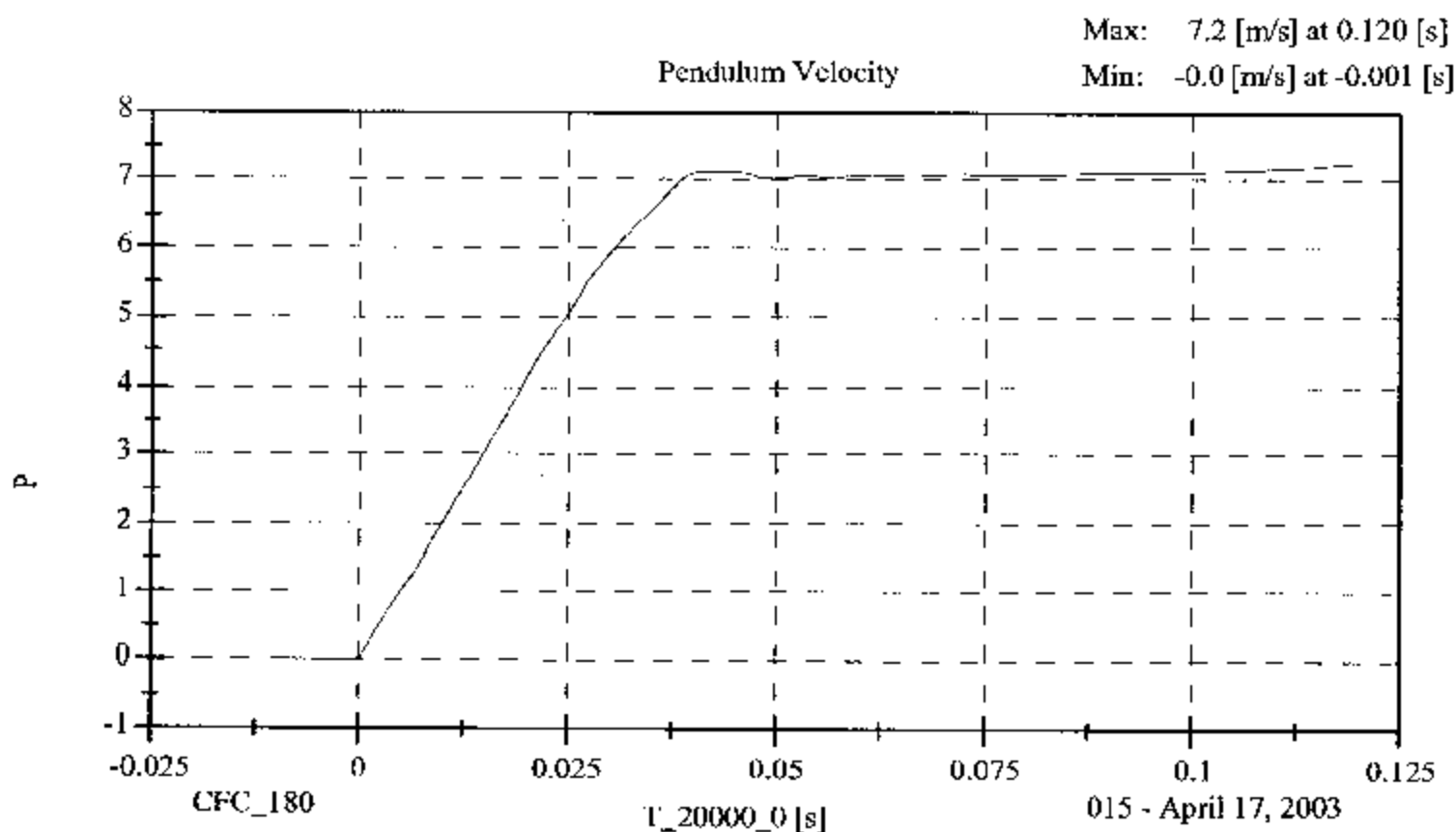
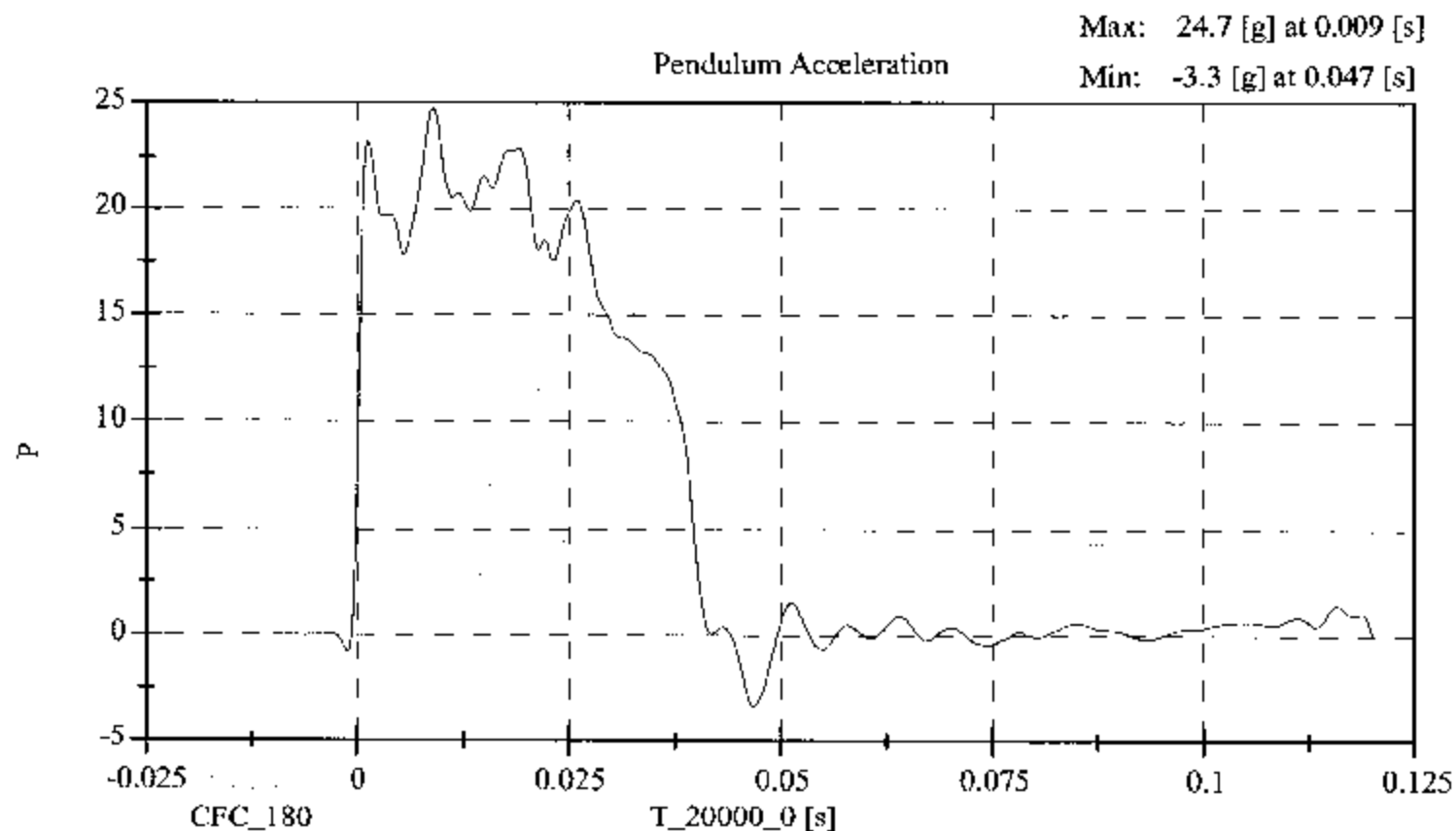
Date: April 17, 2003

Laboratory Technician:

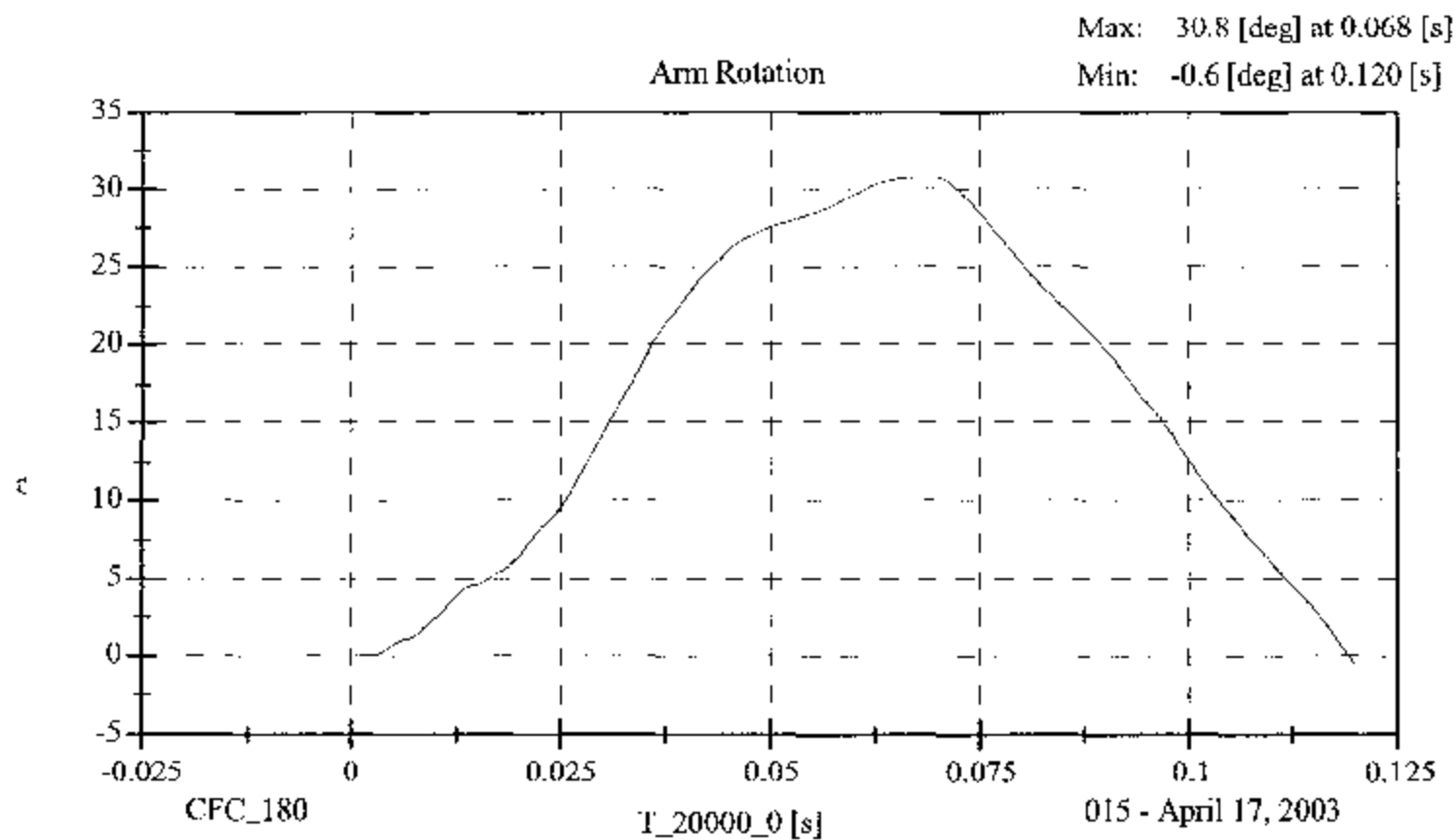
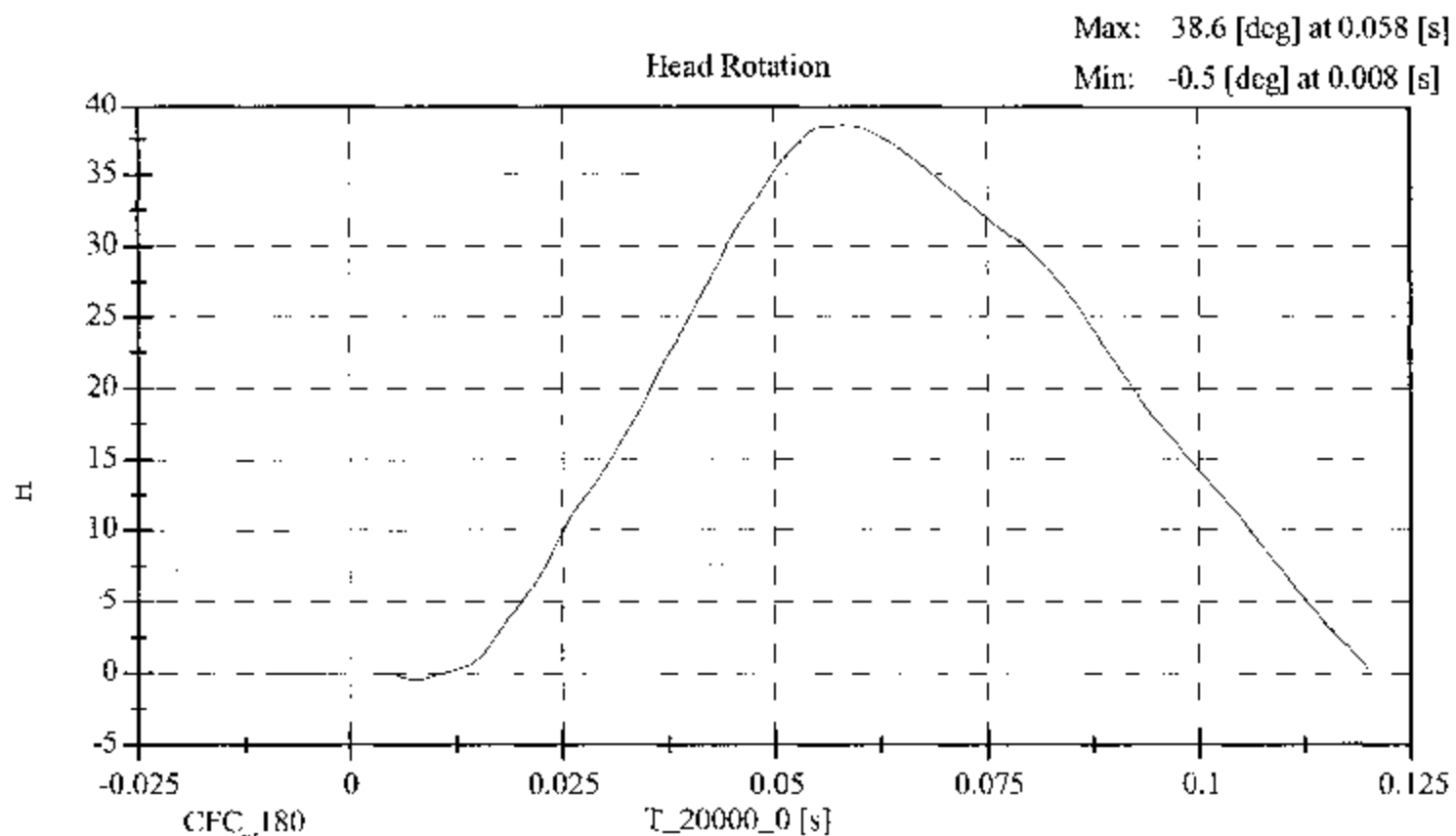
B. Swieczicki

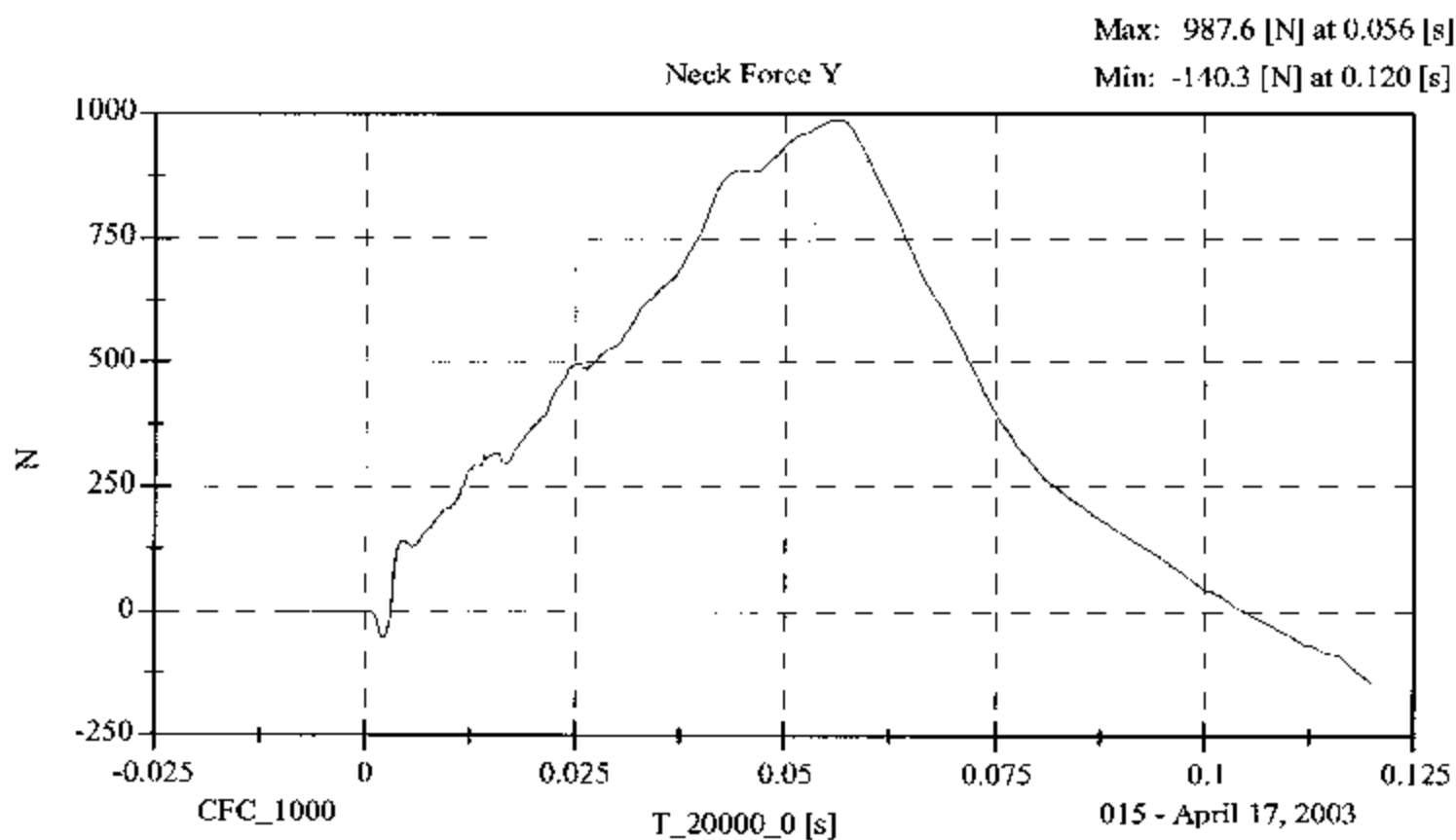
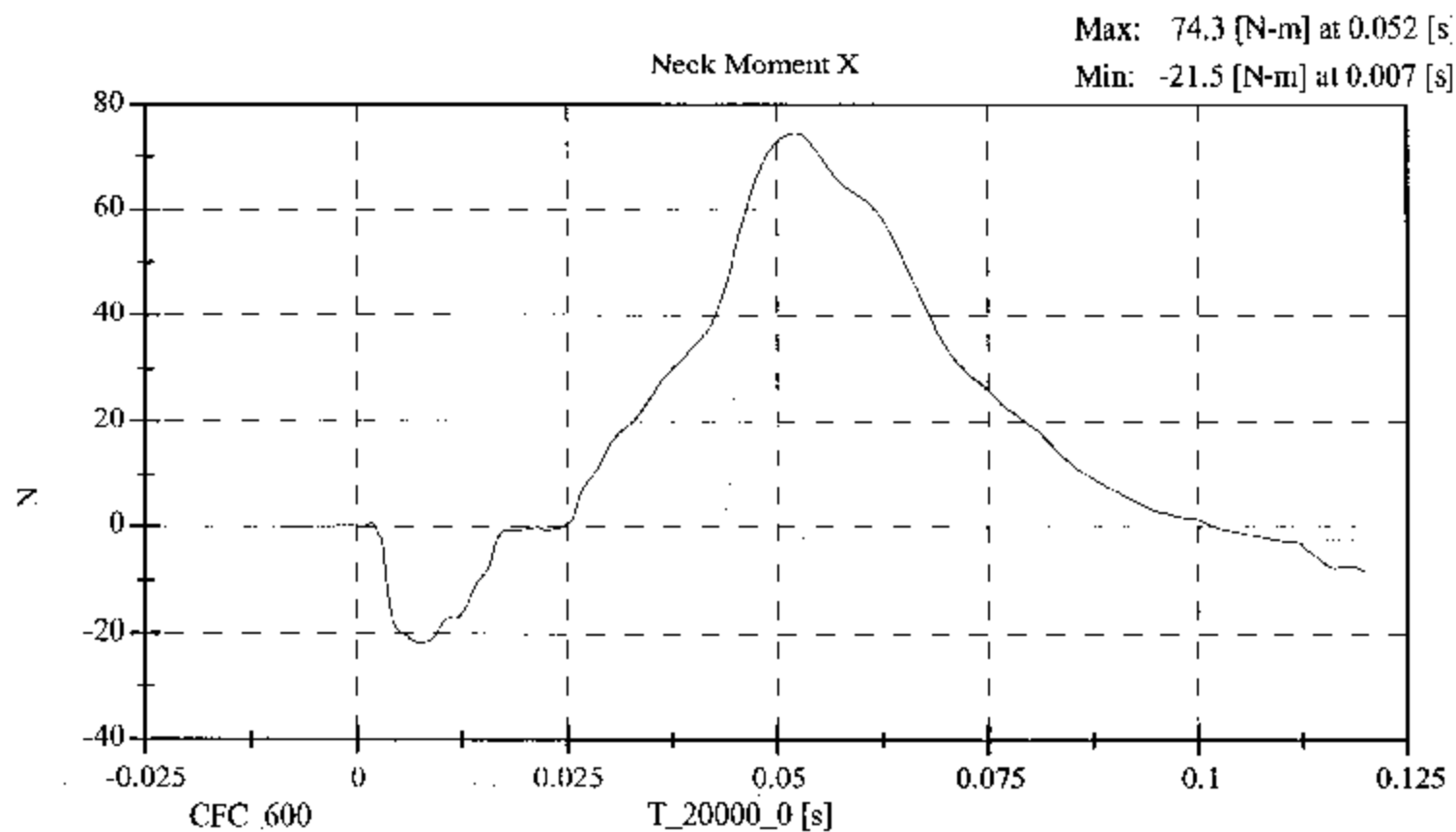
| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|---|---------------|--------------|
| TEMPERATURE (°C) | 20.6 - 22.2 | 20.7 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 33.00 |
| IMPACT VELOCITY (m/s) | 6.89 - 7.13 | 23.20 |
| PENDULUM DELTA V | | |
| DELTA V @ 10 ms (m/s) | 1.96 - 2.55 | 2.02 |
| DELTA V @ 20 ms (m/s) | 4.12 - 5.10 | 4.13 |
| DELTA V @ 30 ms (m/s) | 5.73 - 7.01 | 5.91 |
| DELTA V @ 40-70 ms (m/s) | 6.27 - 7.64 | 7.24 |
| D PLANE ROTATION | | |
| MAXIMUM ROTATION (deg) | 64 - 78 | 68.09 |
| ROT. ANGLE TIME to ZERO (ms) | 50 - 70 | 59.45 |
| MOMENT ABOUT THE OCCIPITAL CONDYLE | | |
| MAX OCCIPITAL MOMENT (Nm) | 88 - 108 | 91.39 |
| OCCIPITAL MOMENT DECAY (ms) | 40.0 - 60.0 | 50.50 |
| HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT | | |
| ROTATION wrt MOMENT (ms) | 0 - 20 | 8.15 |

REMARKS: None

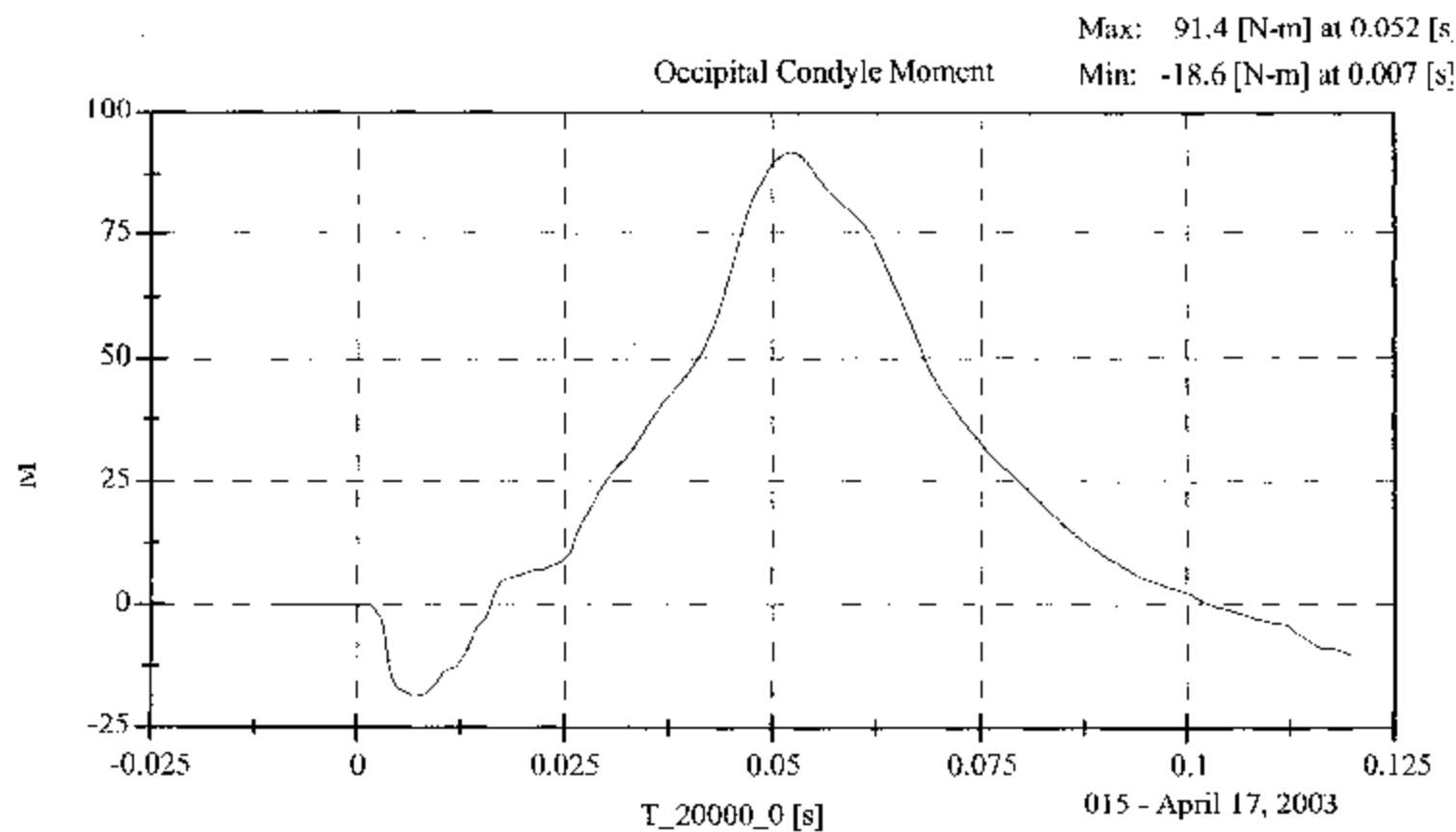
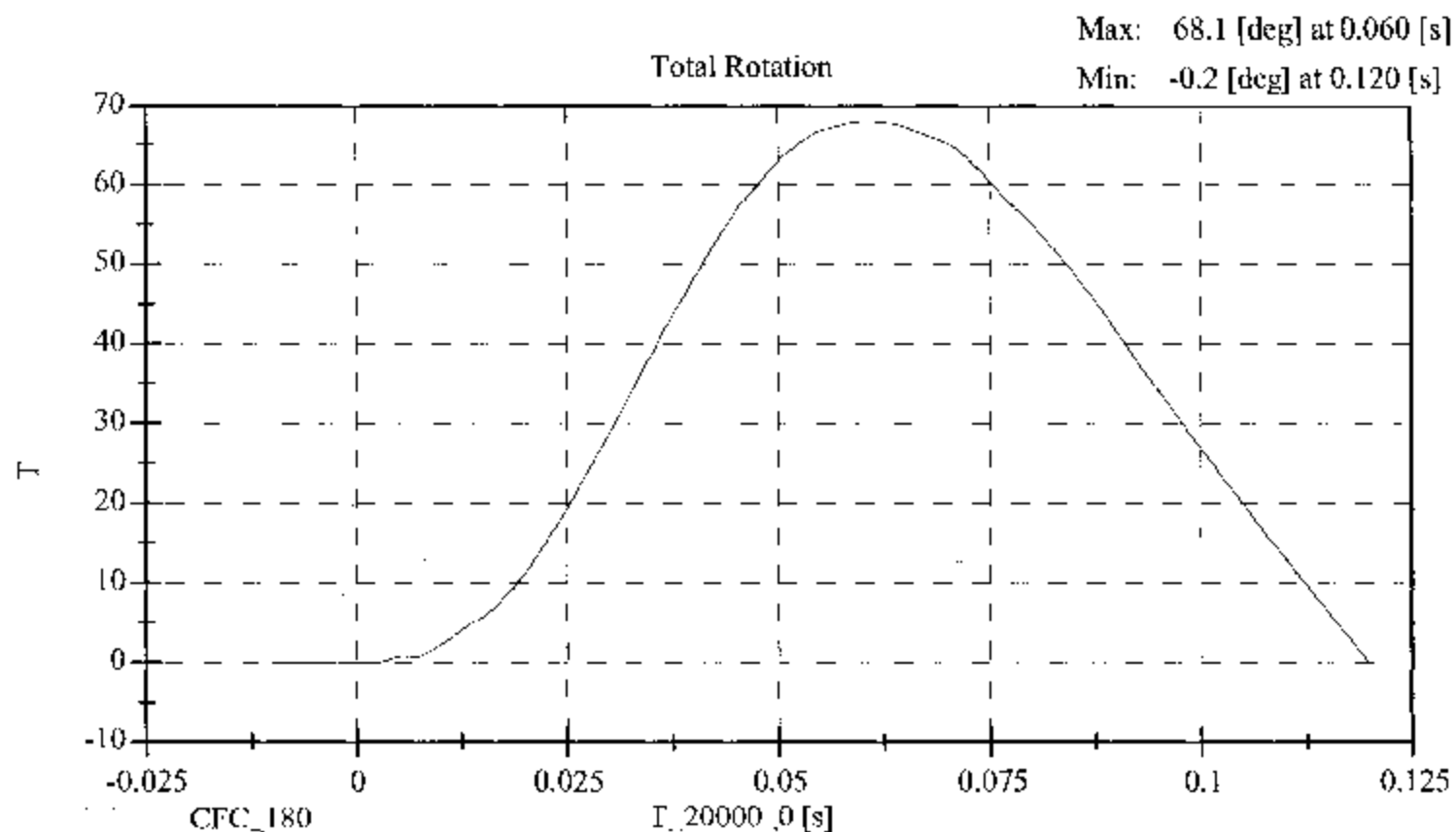


015 - April 17, 2003





015 - April 17, 2003



015 - April 17, 2003

ABDOMINAL COMPRESSION TEST**PRE-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015

Sequential Test Number:

1

Date: April 17, 2003

Laboratory Technician:

B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|-----------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 33.0 |
| FORCE @ 13 mm (N) | 104 - 162 | 119.7 |
| FORCE @ 19 mm (N) | 163 - 221 | 187.7 |
| FORCE @ 25 mm (N) | 222 - 280 | 272.2 |
| FORCE @ 33 mm (N) | 325 - 391 | 387.0 |

REMARKS: None

Dummy S/N

015

W/A

Date

4-17-03

Performed By

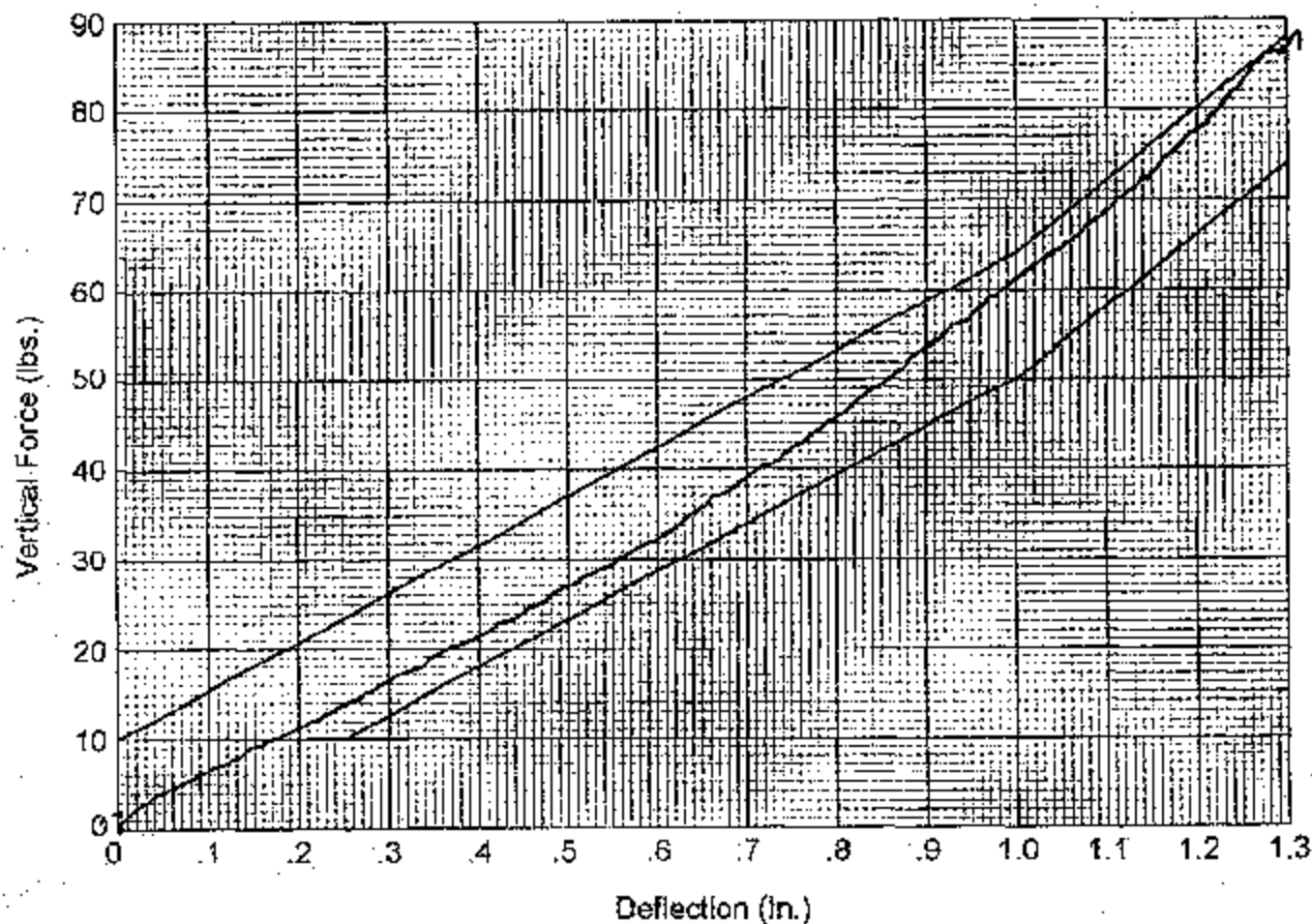
BS

Temp.

70°

Humidity

33%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
PRE-TEST
(Test not required for SID certification)

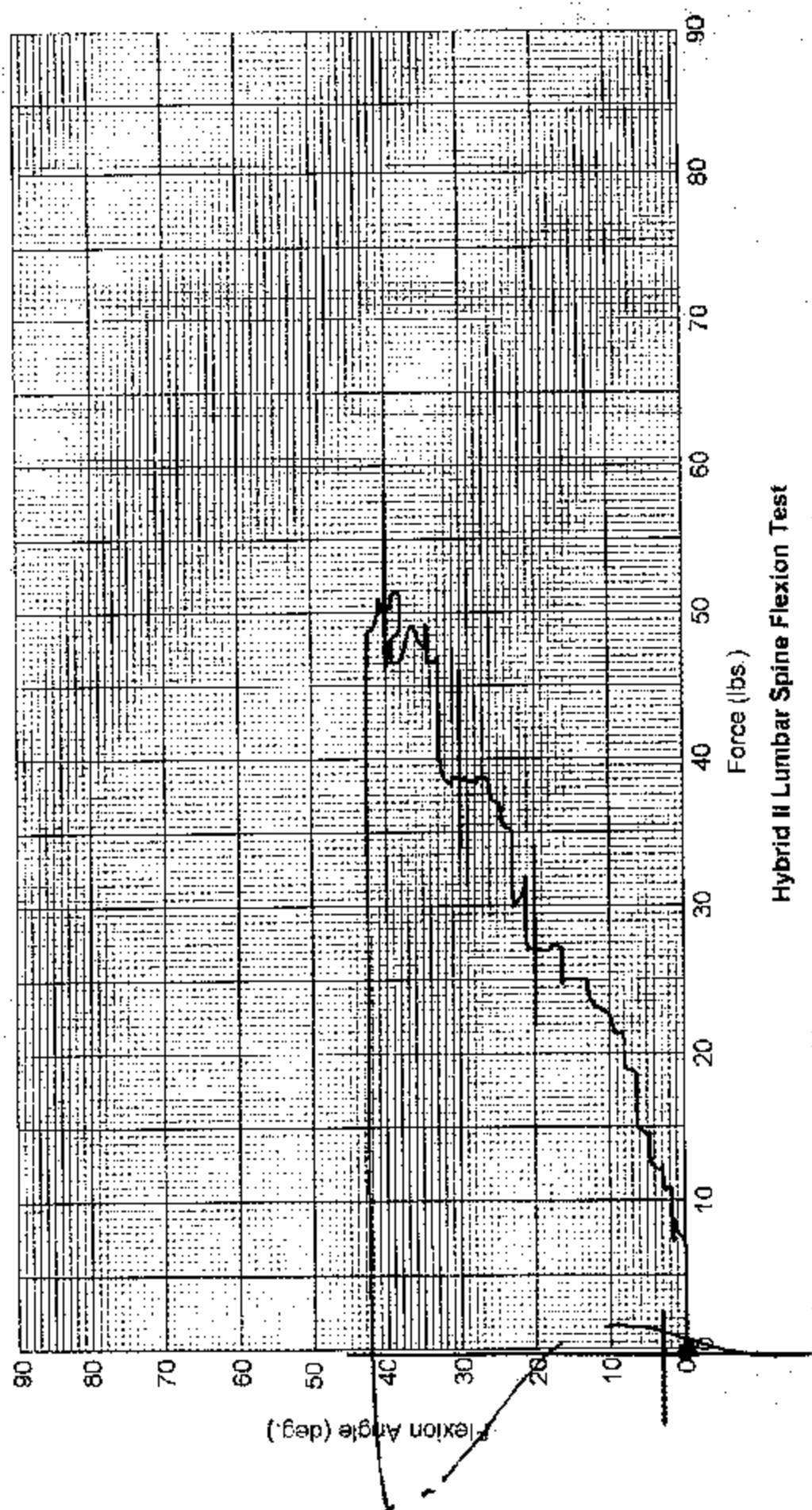
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015 Sequential Test Number: 1
Date: April 17, 2003 Laboratory Technician: B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|-----------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 33.0 |
| FORCE @ 0° (N) | 0 - 26.7 | 0.0 |
| FORCE @ 20° (N) | 97.8 - 151.2 | 120.5 |
| FORCE @ 30° (N) | 151.2 - 204.6 | 171.7 |
| FORCE @ 40° (N) | 204.6 - 258 | 223.3 |
| RETURN ANGLE | 12° max. | 3° |

REMARKS: None

Dummy S/N 015
 W/A _____
 Date 4-17-03
 Performed By [Signature]
 Temp. 70°
 Humidity 33%



Hybrid II Lumbar Spine Flexion Test

PRE-TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015

Sequential Test Number:

1

Date:

April 17, 2003

Laboratory Technician:

B. Swiecicki

| PART | ITEMS CHECKED | COMMENTS |
|--------------|---|----------|
| SKIN | VISUAL INSPECTION | OK |
| HEAD | VISUAL, BALLAST, ACCELEROMETER MOUNT | OK |
| NECK | VISUAL, CABLE TORQUE | OK |
| SPINE BOX | VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT | OK |
| RIB CAGE | VISUAL, MEASURE, STIFFENERS | OK |
| STERNUM | VISUAL | OK |
| LUMBAR SPINE | VISUAL | OK |
| ABDOMEN | VISUAL | OK |
| PELVIS | VISUAL, PALPATE, ACCELEROMETER MOUNT | OK |
| UPPER LEGS | VISUAL | OK |
| KNEES | VISUAL, STOPS, INSERTS | OK |
| LOWER LEGS | VISUAL, RANGE OF MOTION | OK |
| ANKLES | VISUAL, RANGE OF MOTION | OK |
| FEET | VISUAL, RANGE OF MOTION | OK |
| JOINTS | 1 TO 2 g RANGE | OK |
| OTHER | NONE | |

REMARKS: None

CALIBRATION TEST RESULTS

PRE-TEST

STD H3 NO.: 016

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 1
Date: April 17, 2003 Laboratory Technician: B. Swicicki

| TEST | COMMENTS |
|------------------------------|--------------------------|
| EXTERNAL DIMENSIONS | Passed all requirements. |
| THORACIC SHOCK ABSORBER TEST | Passed all requirements. |
| LATERAL THORAX IMPACT TEST | Passed all requirements. |
| LATERAL PELVIS IMPACT TEST | Passed all requirements. |
| HEAD DROP TEST* | Passed all requirements. |
| LATERAL NECK BEND TEST* | Passed all requirements. |
| ABDOMINAL COMPRESSION TEST* | Passed all requirements. |
| LUMBAR FLEXION TEST* | Passed all requirements. |

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 1
Date: April 17, 2003 Laboratory Technician: B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|------------------------------------|---------------|--------------|
| SH- Seated Height (mm) | 889 - 909 | 899 |
| RH- Rib Height (mm) | 502 - 520 | 513 |
| HP- Hip Pivot Height (mm) | 99 ref. | 99 |
| RD- Rib from Back Line (mm) | 229 - 241 | 239 |
| KH- Knee Pivot from Back Line (mm) | 511 - 526 | 521 |
| KV- Knee Pivot to Floor (mm) | 490 - 505 | 495 |
| HW- Hip Width (mm) | 356 - 391 | 368 |

REMARKS: None

**THORACIC SHOCK ABSORBER TESTS
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 5
Date: February 3, 2003 Laboratory Technician: B. Swiericki

DAMPER IDENTIFICATION: 016

| TEST PARAMETER | | SPECIFICATION | TEST RESULTS |
|-----------------------|-------------------|---------------|--------------|
| TEMPERATURE (°C) | | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | | 10 - 70 | 29.00 |
| VELOCITY 3.05 m/s | FORCE (N) | 836 - 1125 | 951.92 |
| | DISPLACEMENT (mm) | 30 - 35 | 34.41 |
| VELOCITY 4.27 m/s | FORCE (N) | 1730 - 2099 | 1877.47 |
| | DISPLACEMENT (mm) | 32 - 37 | 36.94 |
| VELOCITY 6.10 m/s | FORCE (N) | 3741 - 4448 | 4426.58 |
| | DISPLACEMENT (mm) | 33 - 40 | 39.14 |

DAMPER SETTING: 5

REMARKS: None

016 Shock Low at 3.05 m/s

Low Part 572F Shock Absorber Impact

Calibration Date: 02-03-03

Serial No: 016

Work File: 016SL 2-03-03

TEST RESULTS

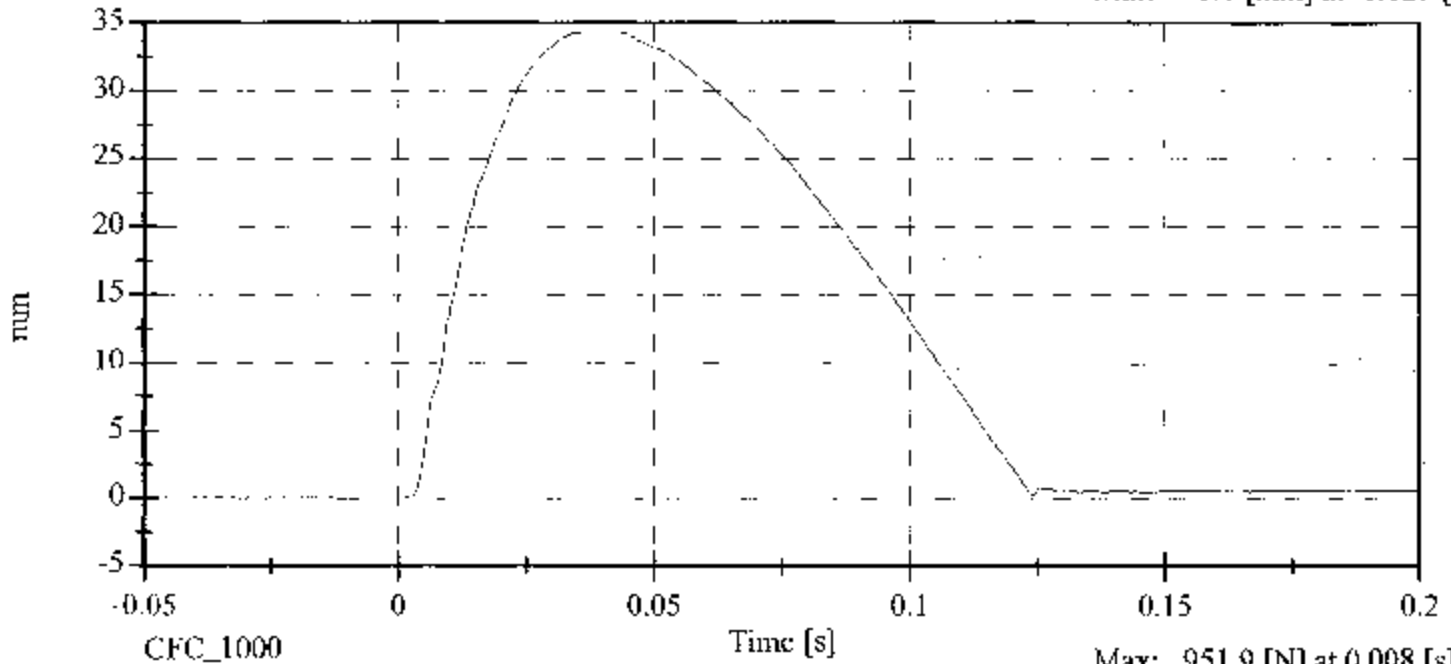
| TEST CONDITION | PARAMETERS | RESULTS | STATUS |
|------------------|------------------|----------|--------|
| Lab Temperature: | 18.9-25.5 C | 21.1 C | Passed |
| Lab Humidity: | 10-70 % | 29.00 % | Passed |
| Displacement: | 30.00-35.00 mm | 34.41 mm | Passed |
| Maximum Force: | 836.00-1125.00 N | 951.92 N | Passed |

016 Shock Low

Displacement vs. Time

Max: 34.4 [mm] at 0.037 [s]

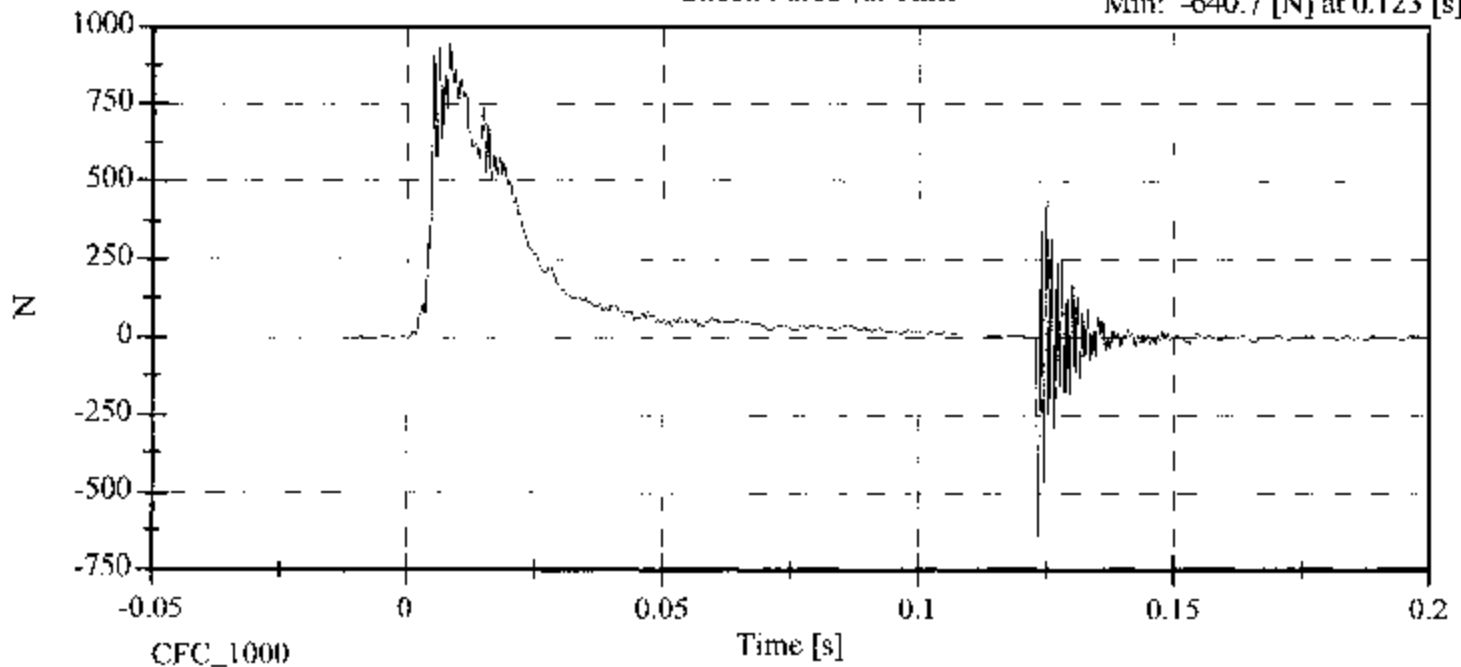
Min: -0.0 [mm] at -0.029 [s]



Shock Force vs. Time

Max: 951.9 [N] at 0.008 [s]

Min: -640.7 [N] at 0.123 [s]



016 Shock Medium at 4.27 m/s

Medium Part 572F Shock Absorber Impact

Calibration Date: 02-03-03

Serial No: 016

Work File: 016SM 2-03-03

TEST RESULTS

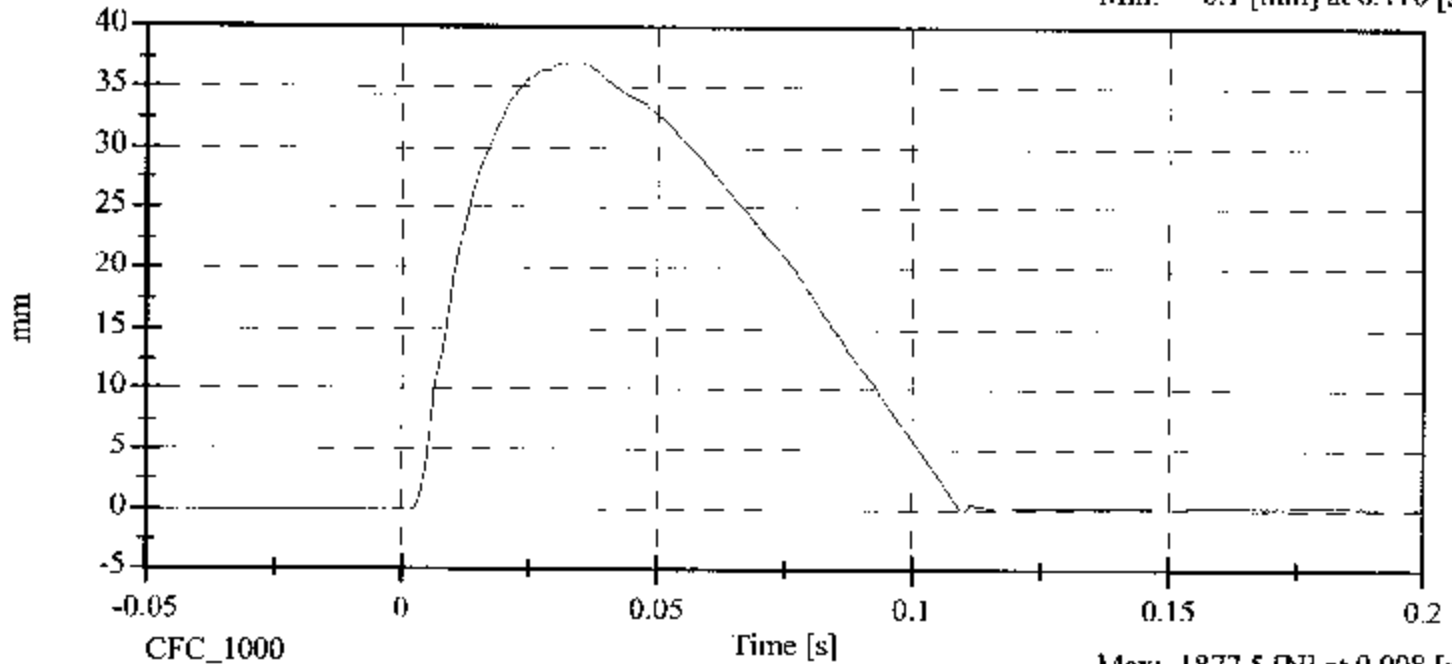
| TEST CONDITION | PARAMETERS | RESULTS | STATUS |
|------------------|-------------------|-----------|--------|
| Lab Temperature: | 18.9-25.5 C | 21.1 C | Passed |
| Lab Humidity: | 10-70 % | 29.00 % | Passed |
| Displacement: | 32.00-37.00 mm | 36.94 mm | Passed |
| Maximum Force: | 1730.00-2099.00 N | 1877.47 N | Passed |

016 Shock Medium

Displacement vs. Time

Max: 36.9 [mm] at 0.033 [s]

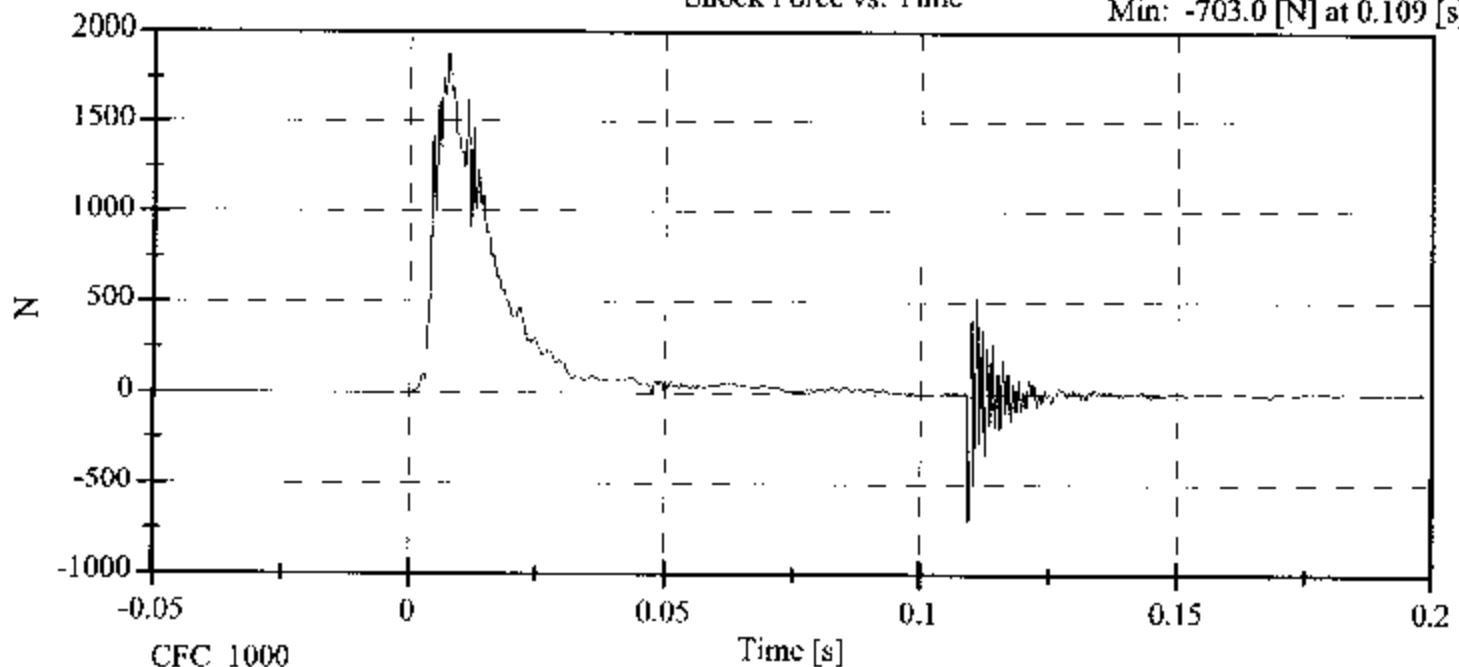
Min: -0.1 [mm] at 0.110 [s]



Shock Force vs. Time

Max: 1877.5 [N] at 0.008 [s]

Min: -703.0 [N] at 0.109 [s]



016 Shock High at 6.10 m/s

High Part 572F Shock Absorber Impact

Calibration Date: 02-03-03

Serial No: 016

Work File: 016SH 2-03-03

TEST RESULTS

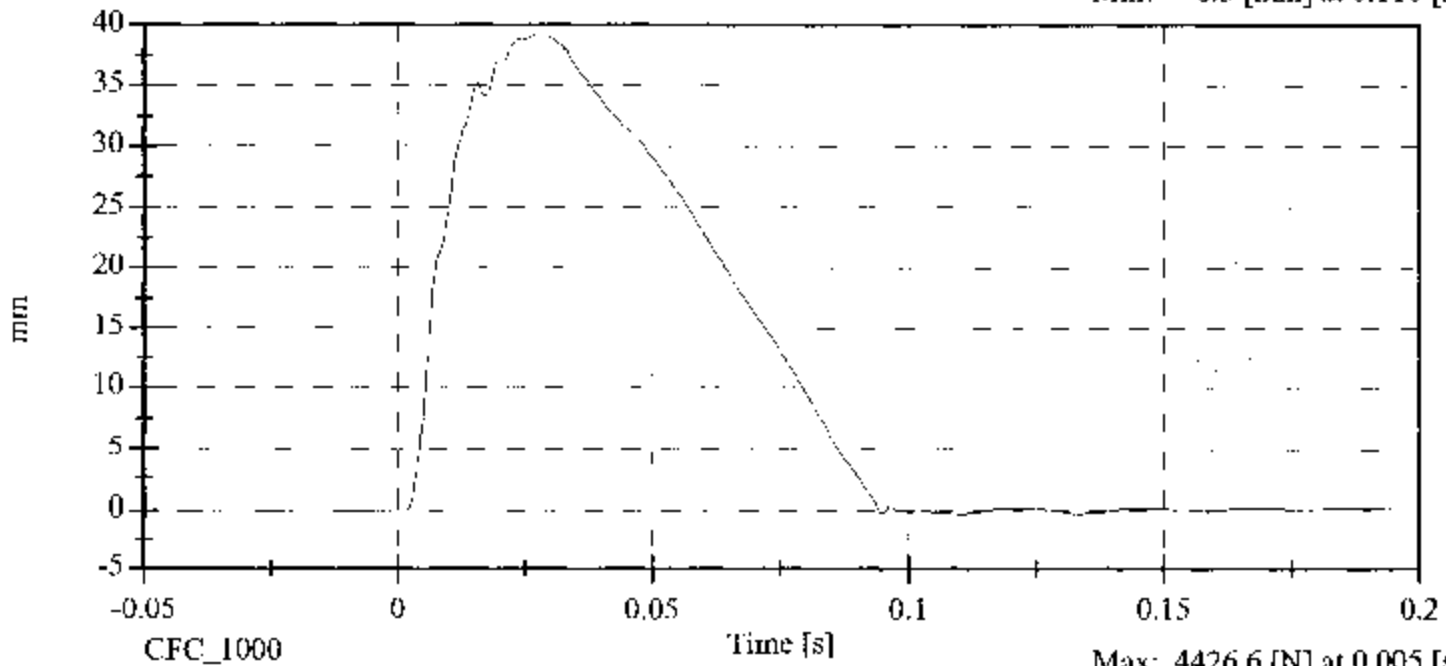
| TEST CONDITION | PARAMETERS | RESULTS | STATUS |
|------------------|-------------------|-----------|--------|
| Lab Temperature: | 18.9-25.5 C | 21.1 C | Passed |
| Lab Humidity: | 10-70 % | 29.00 % | Passed |
| Displacement: | 33.00-40.00 mm | 39.14 mm | Passed |
| Maximum Force: | 3741.00-4448.00 N | 4426.58 N | Passed |

016 Shock High

Displacement vs. Time

Max: 39.1 [mm] at 0.027 [s]

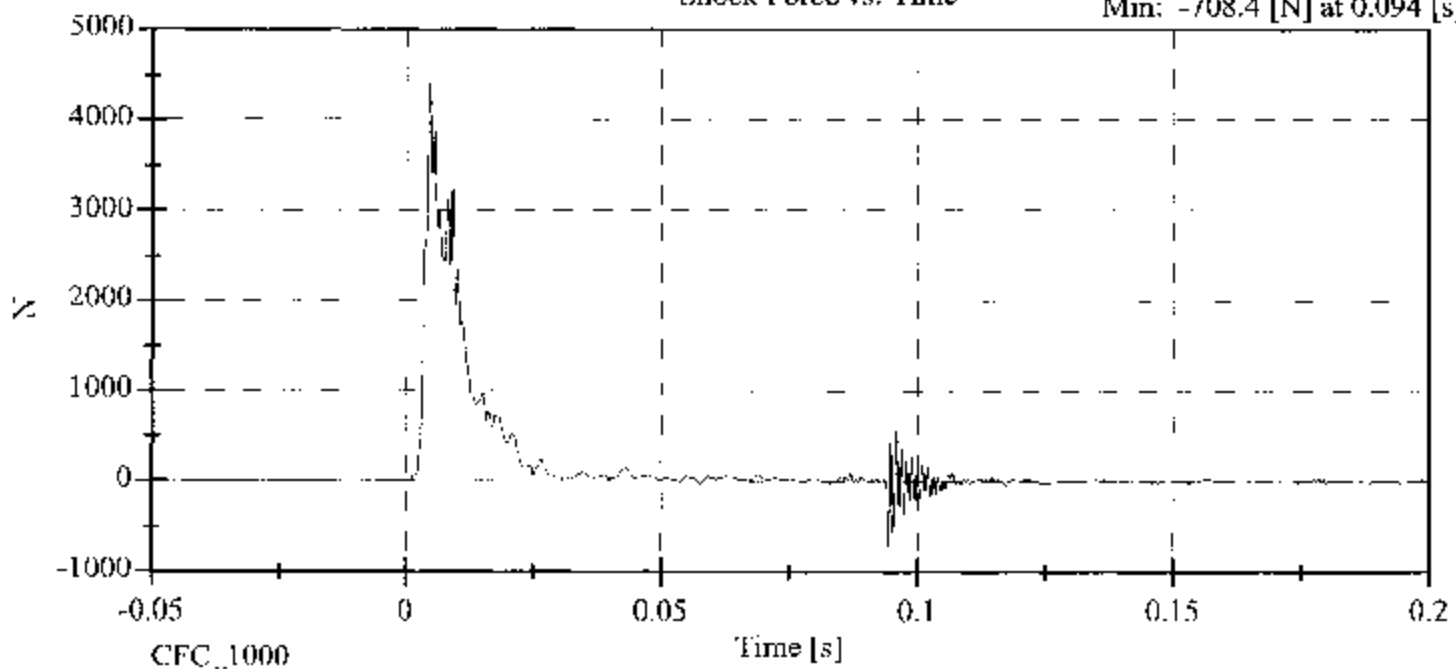
Min: -0.3 [mm] at 0.110 [s]



Shock Force vs. Time

Max: 4426.6 [N] at 0.005 [s]

Min: -708.4 [N] at 0.094 [s]



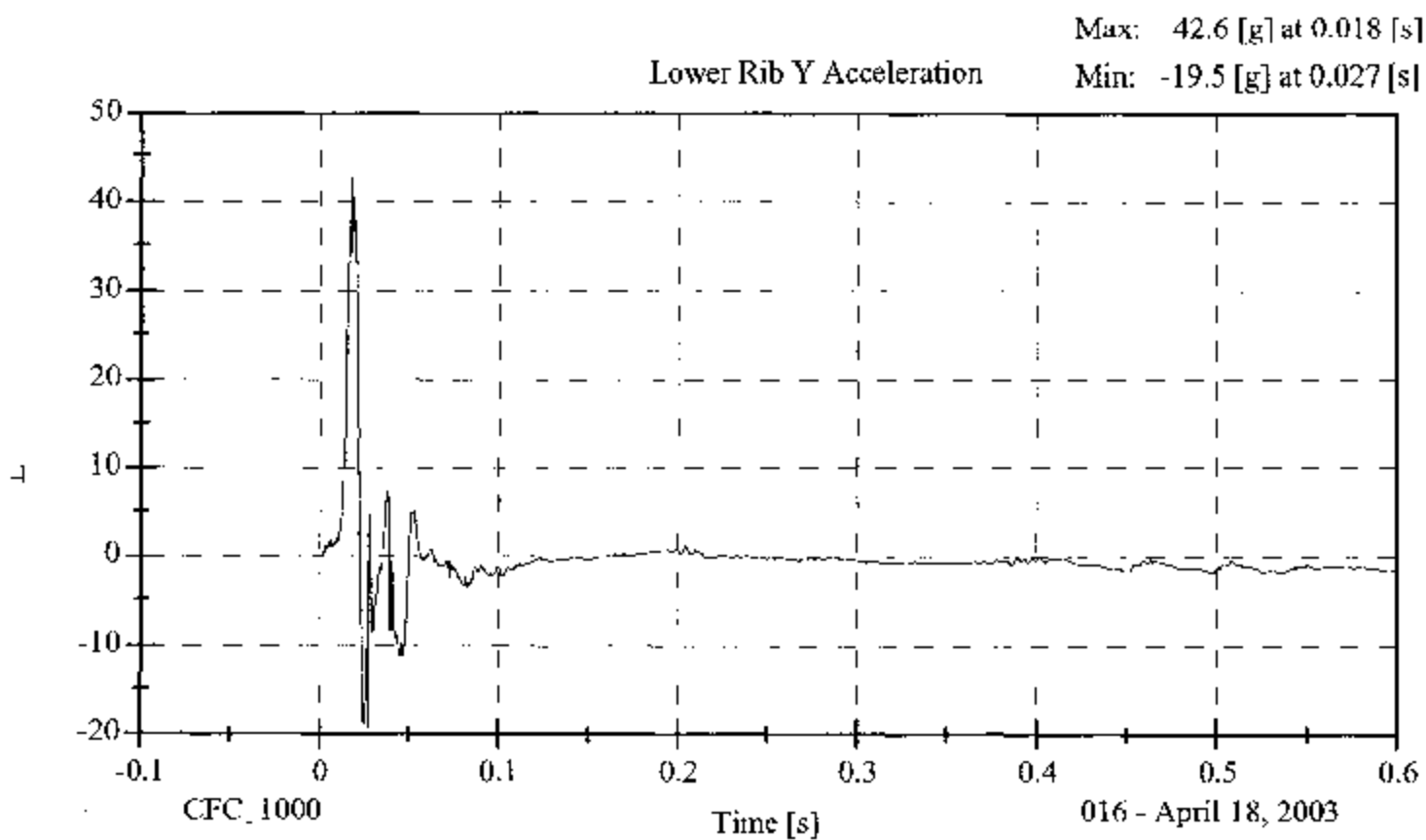
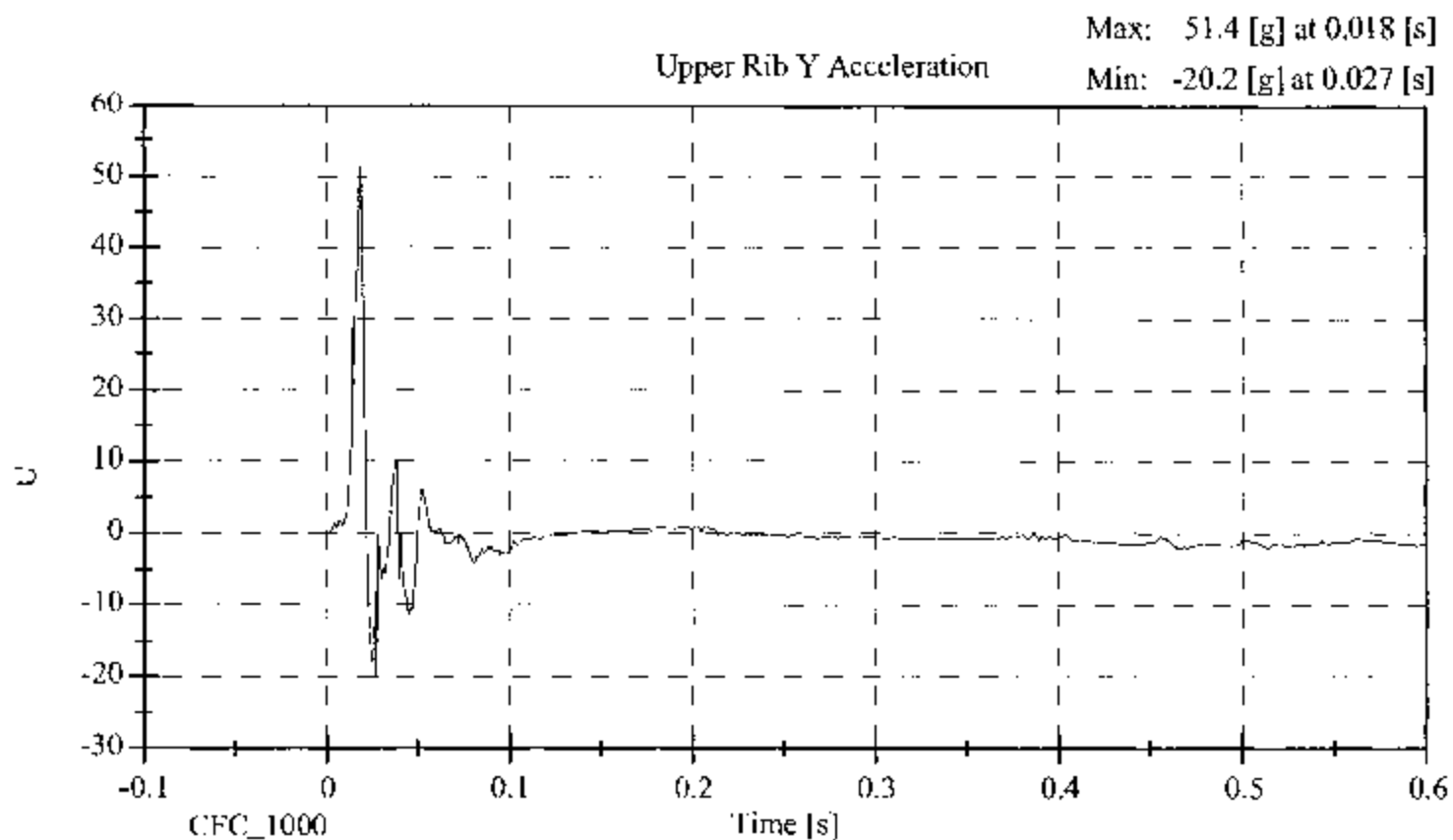
**LATERAL THORAX IMPACT TEST
PRE-TEST**

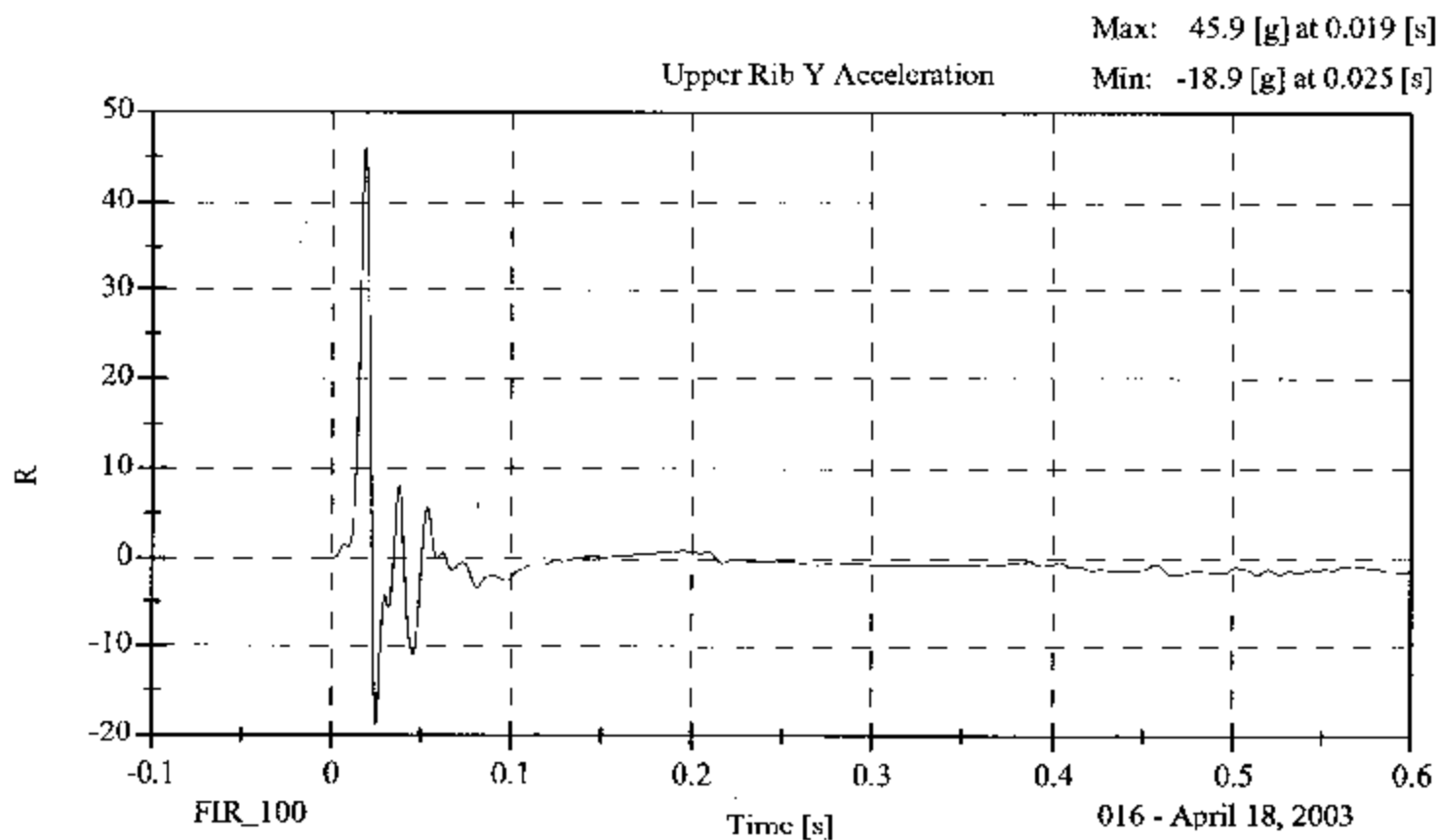
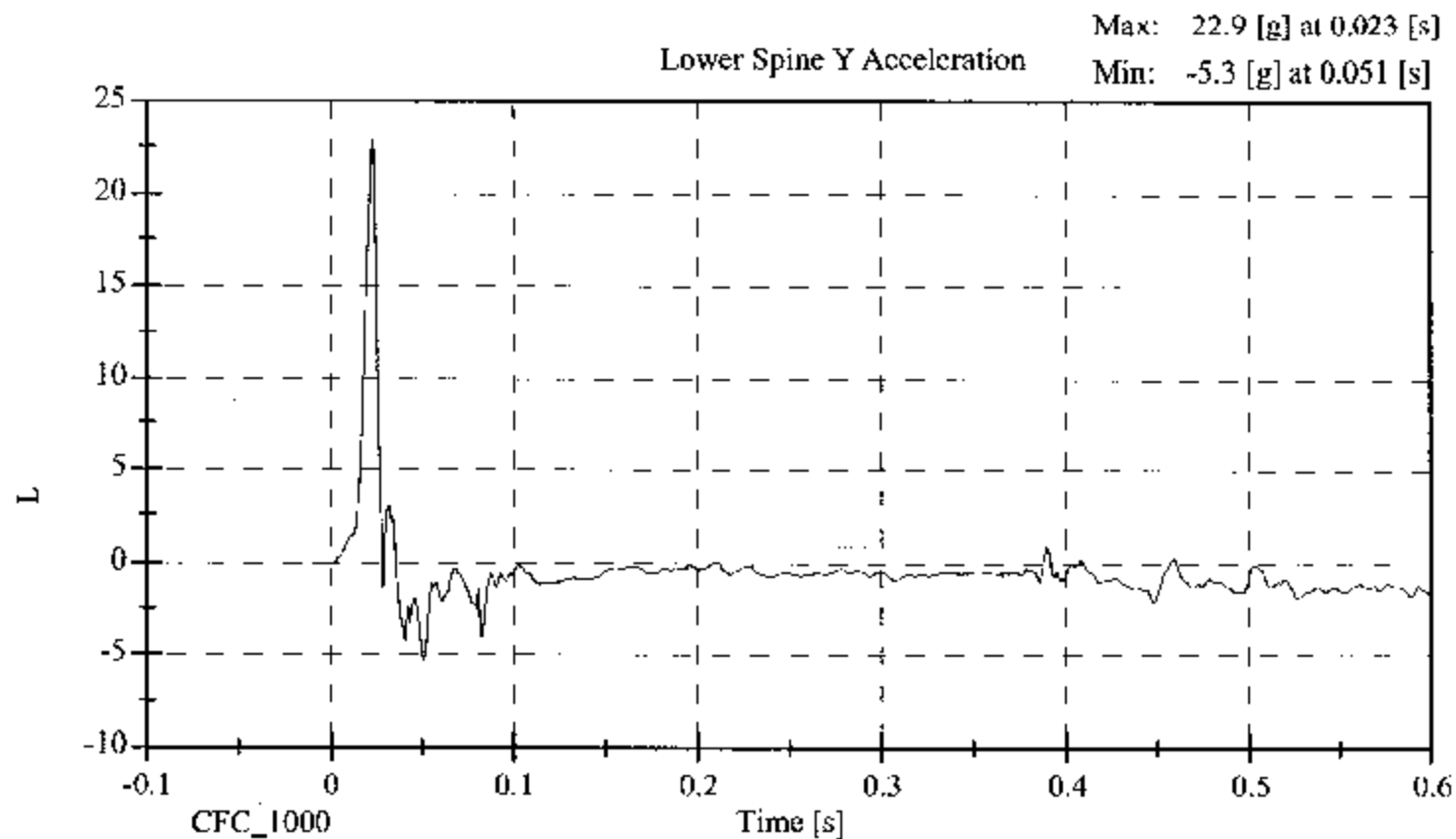
CONFIGURED FOR LEFT SIDE IMPACT

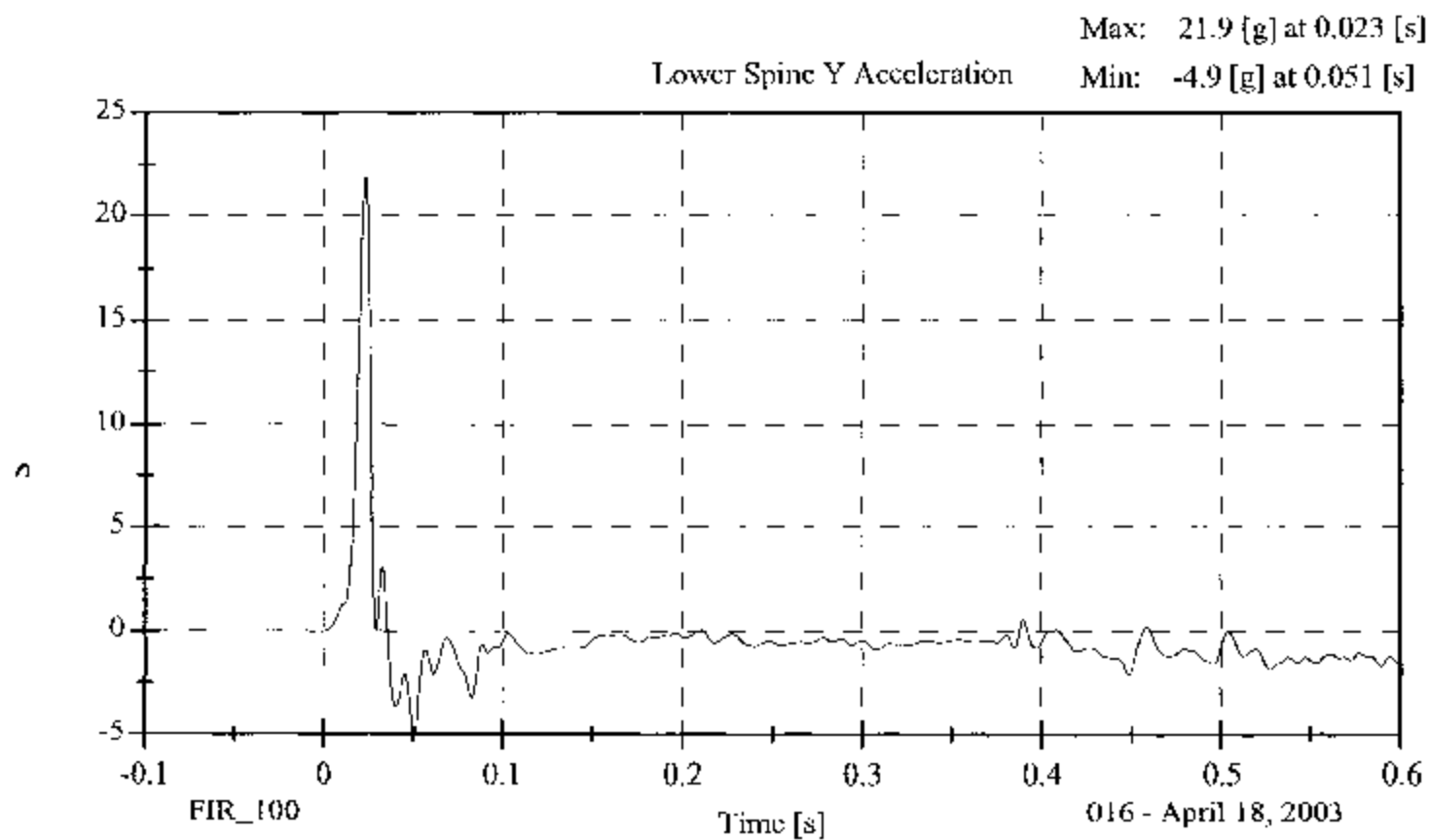
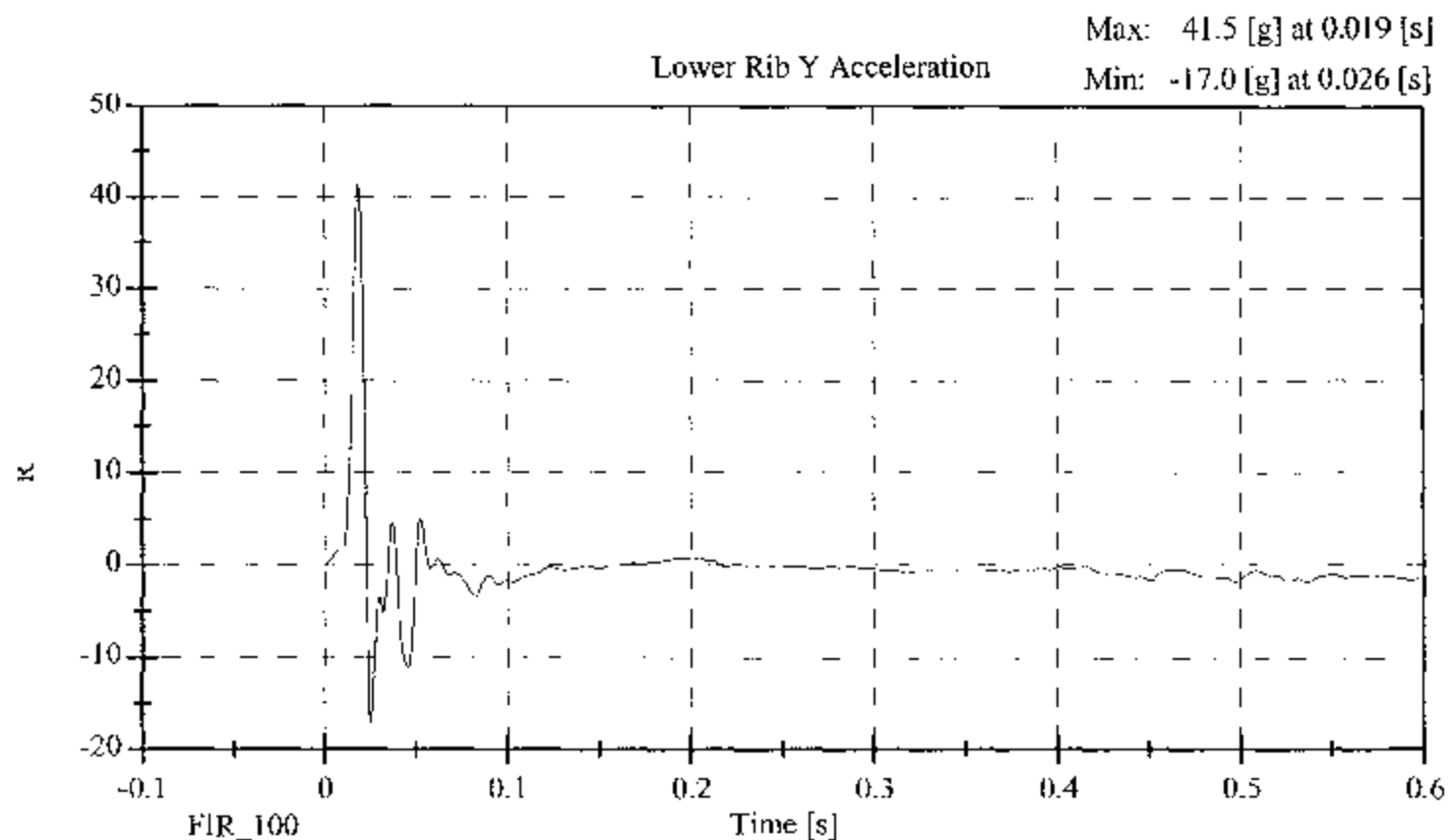
SID H3 Serial No.: 016 Sequential Test Number: 1
Date: April 18, 2003 Laboratory Technician: B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|-----------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 35.0 |
| PROBE SPEED (m/s) | 4.27 - 4.33 | 4.27 |
| UPPER RIB (g's) | 37 - 46 | 45.95 |
| LOWER RIB (g's) | 37 - 46 | 41.51 |
| LOWER SPINE (g's) | 15 - 22 | 21.93 |

REMARKS: None







**LATERAL PELVIS IMPACT TEST
PRE-TEST**

CONFIGURED FOR LEFT SIDE IMPACT

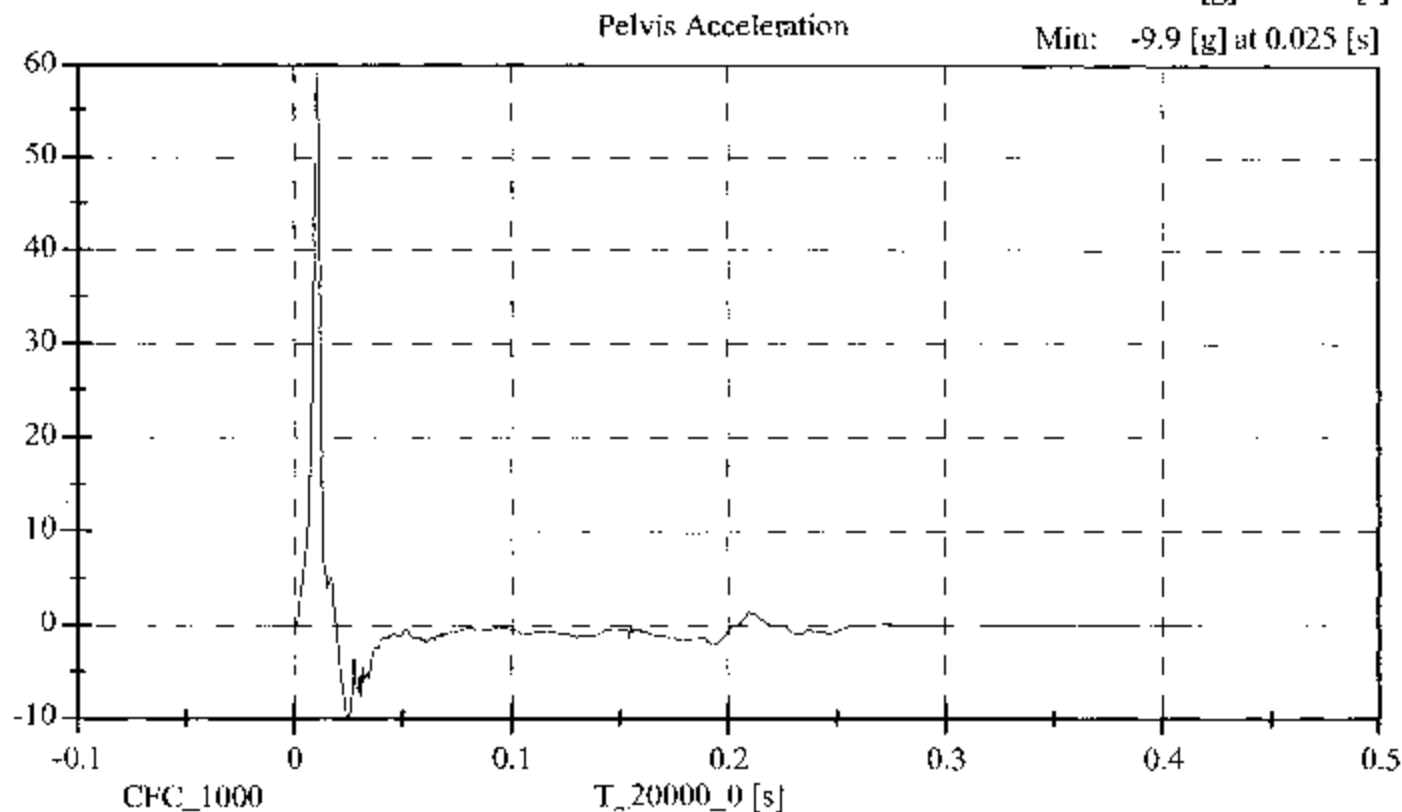
SID H3 Serial No.: 016 Sequential Test Number: 1
Date: April 18, 2003 Laboratory Technician: B. Swiericki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|---------------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 35.0 |
| PROBE SPEED (m/s) | 4.27 - 4.33 | 4.28 |
| PELVIS ACCELERATION (g's) | 40 - 60 | 47.79 |

REMARKS: None

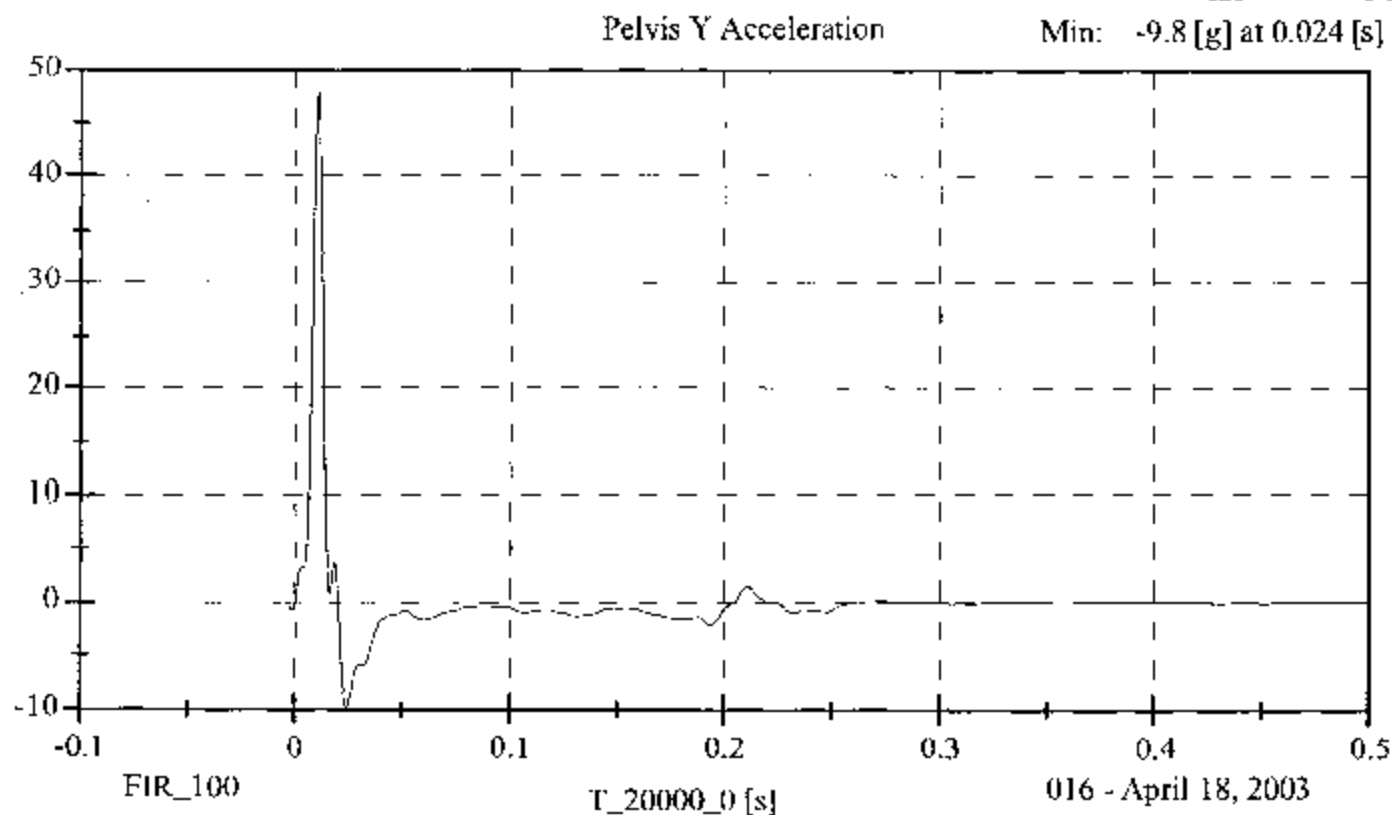
Max: 59.2 [g] at 0.010 [s]

Min: -9.9 [g] at 0.025 [s]



Max: 47.8 [g] at 0.011 [s]

Min: -9.8 [g] at 0.024 [s]



016 - April 18, 2003

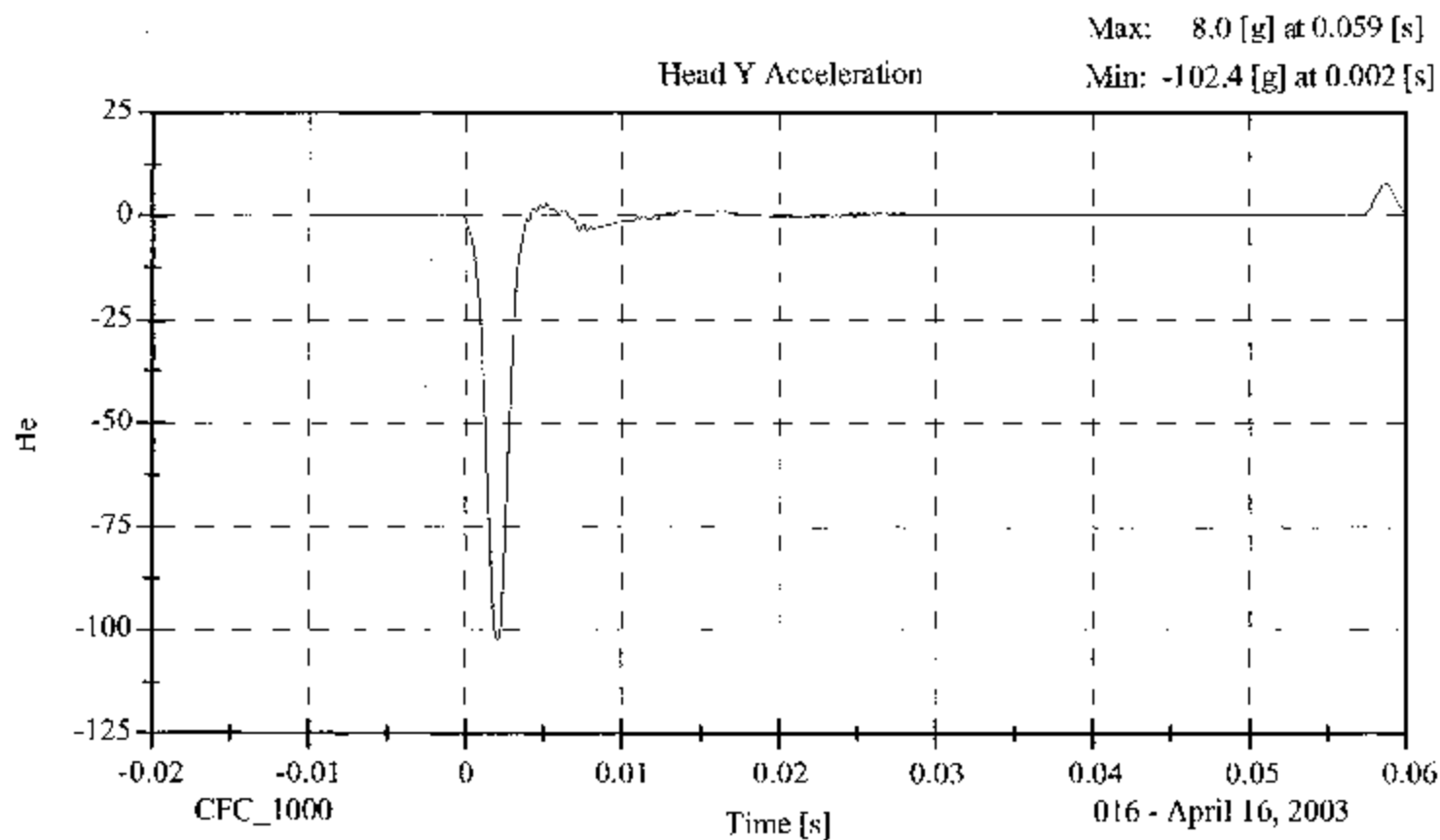
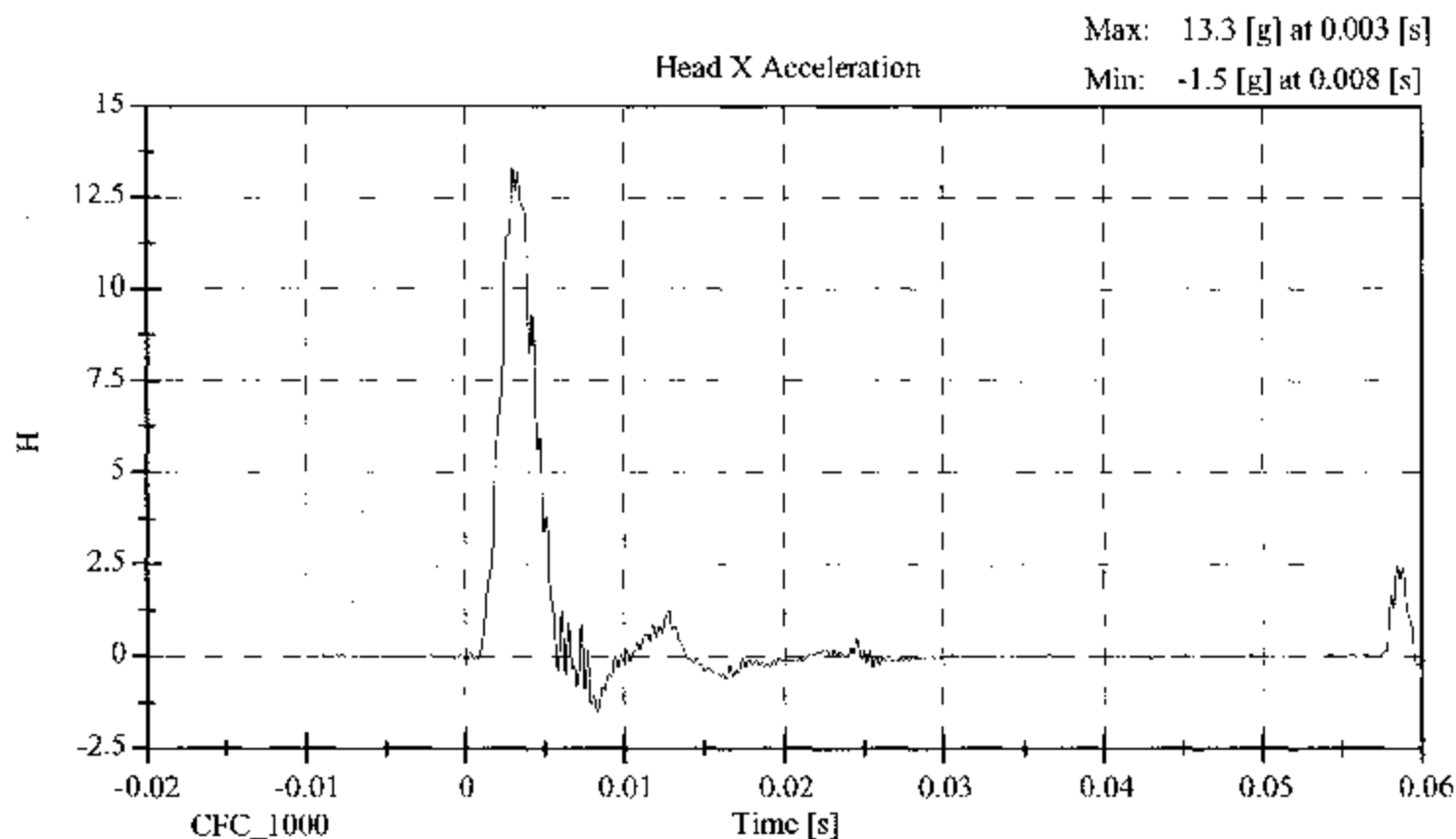
HEAD DROP TEST
PRE-TEST
(Test not required for SID certification)

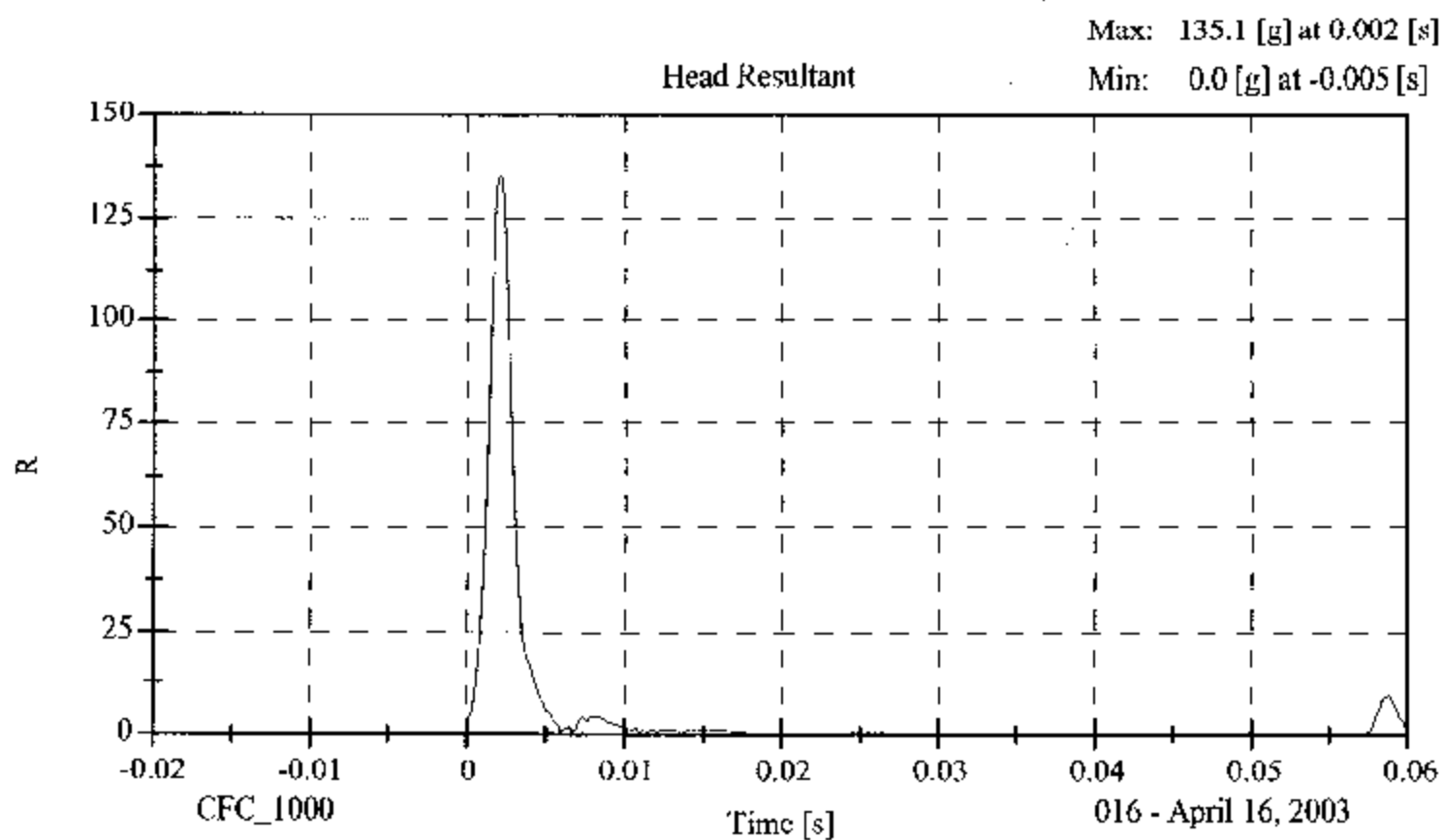
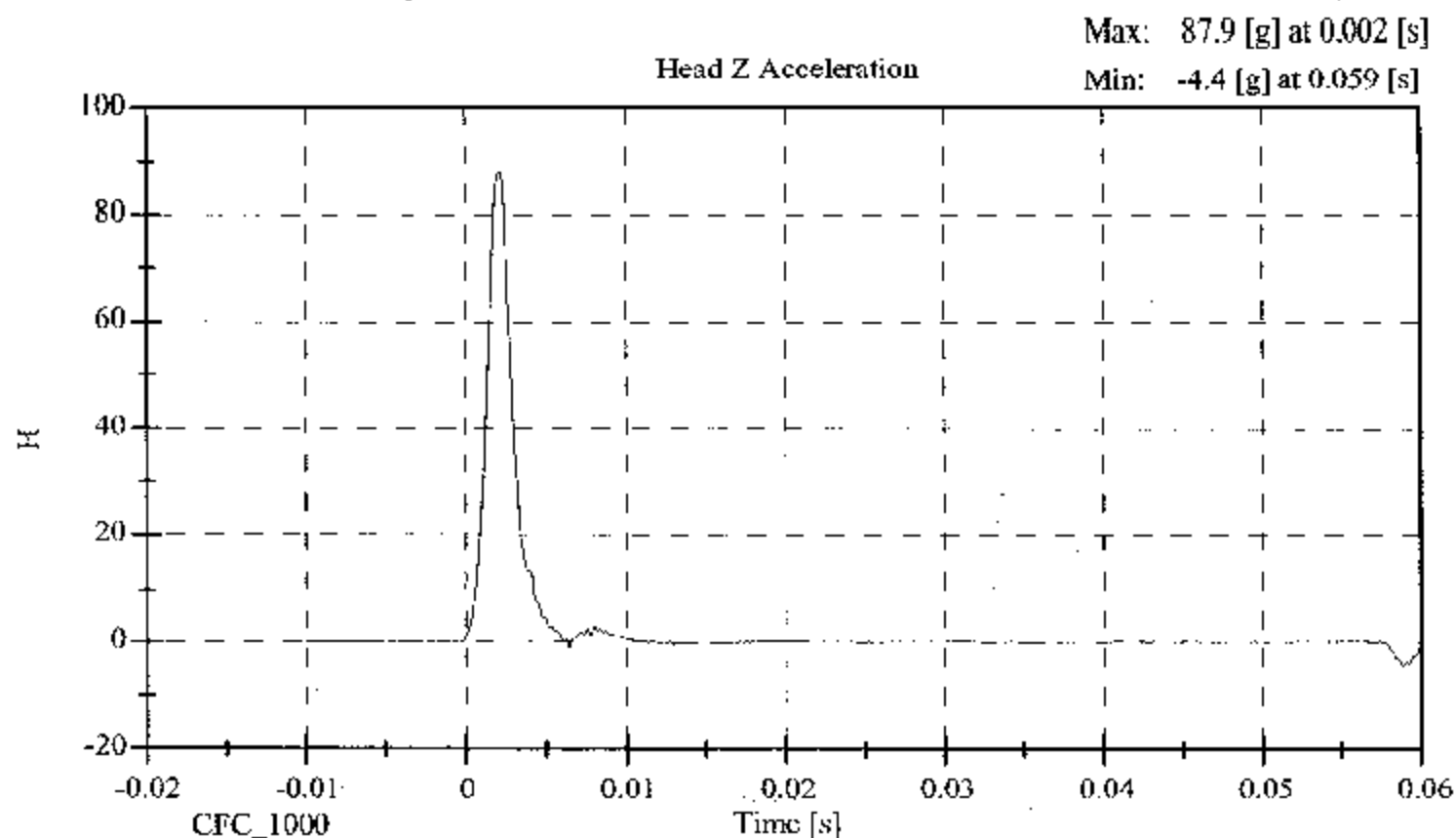
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: April 16, 2003 Laboratory Technician: B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|----------------------------------|------------------|--------------|
| TEMPERATURE (°C) | 20.6 – 22.2 | 20.7 |
| RELATIVE HUMIDITY (%) | 10 – 70 | 30.00 |
| PEAK RESULTANT ACCELERATION (Gs) | 120 – 150 | 135.07 |
| PEAK LATERAL ACCELERATION (Gs) | Not to Exceed 15 | 13.29 |
| CURVE PERCENT NONMODAL (%) | < 15 | 6.83 |

REMARKS: None





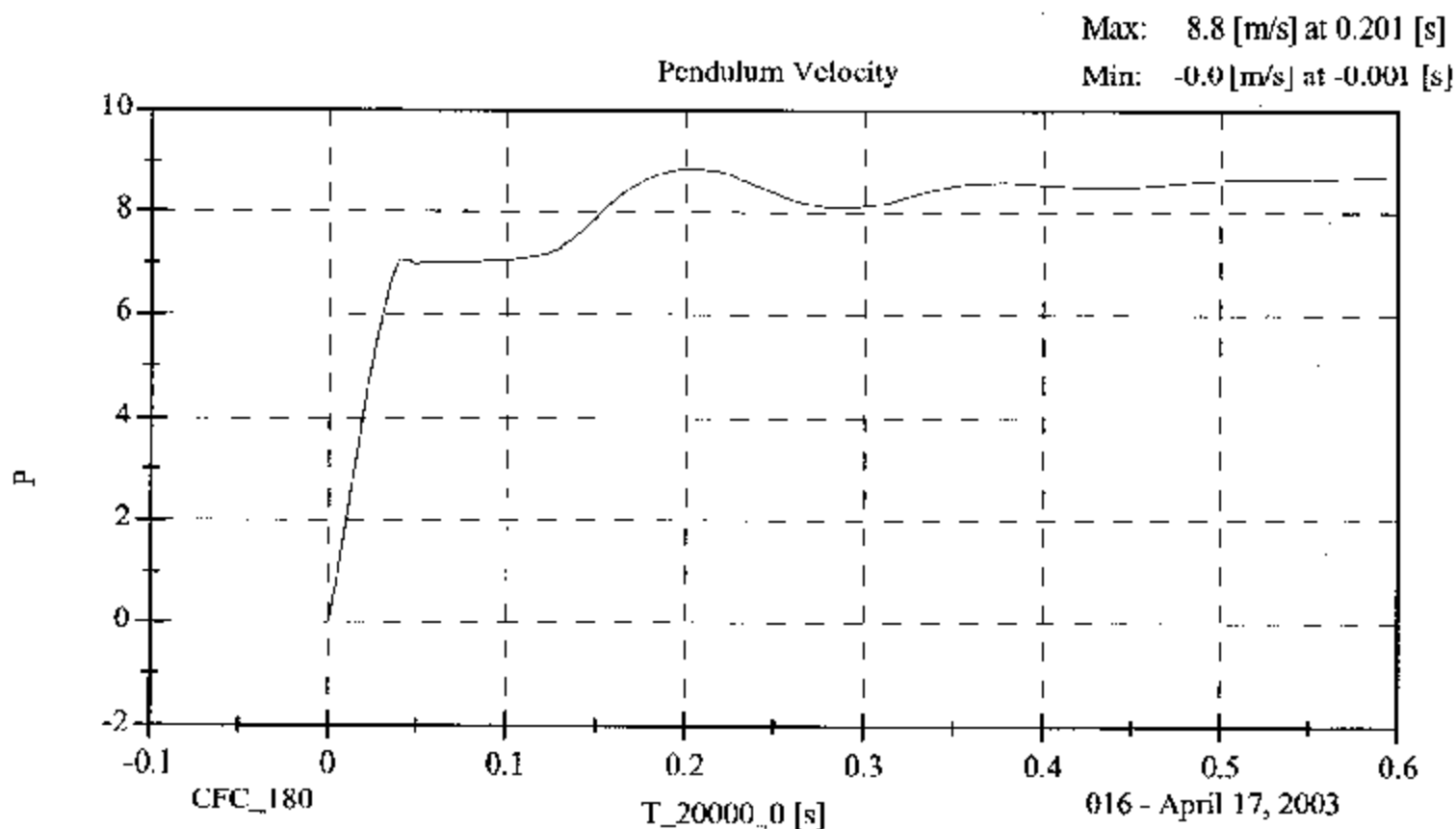
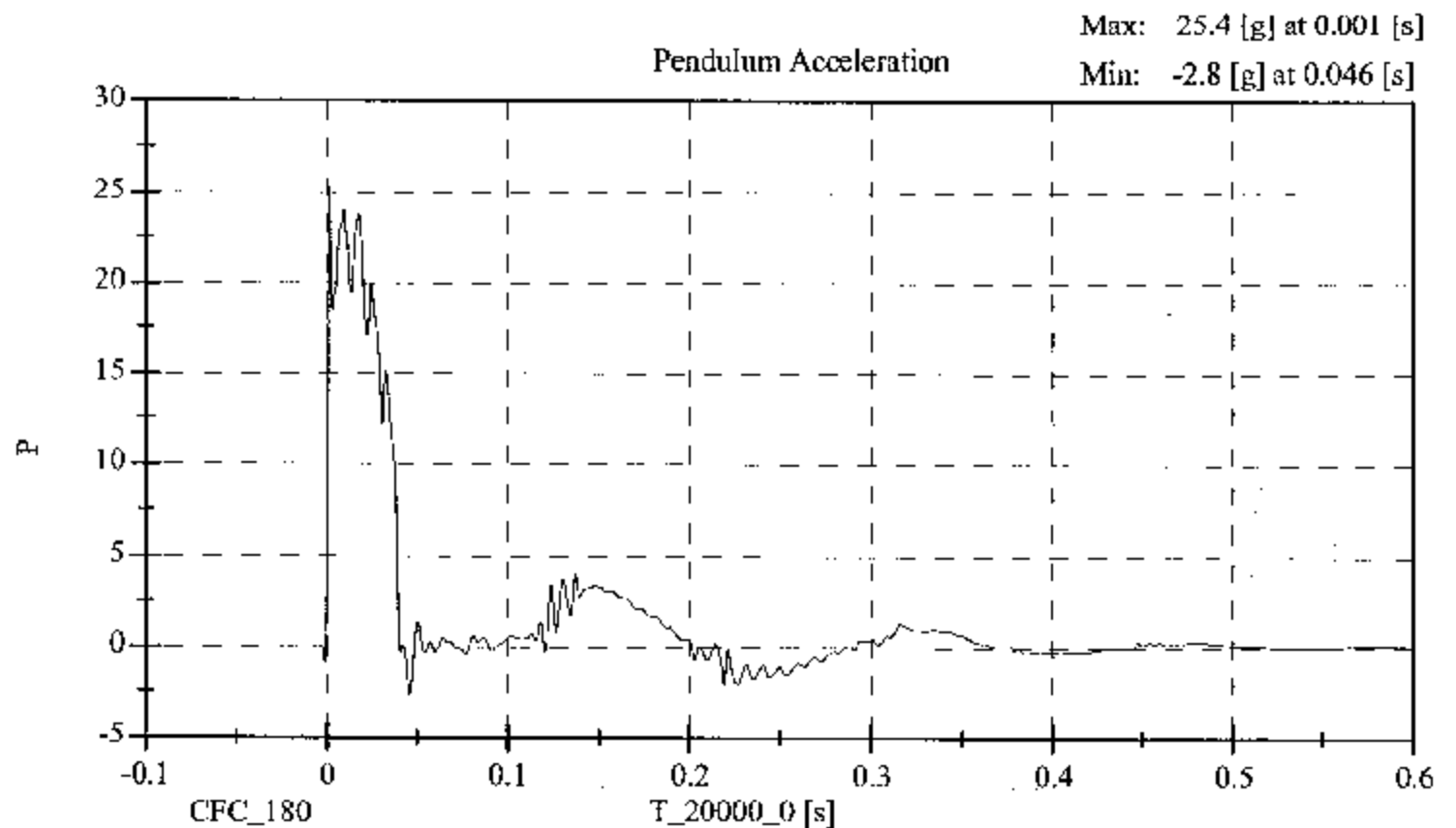
LATERAL NECK BENDING TEST
PRE-TEST
(Test not required for SID certification)

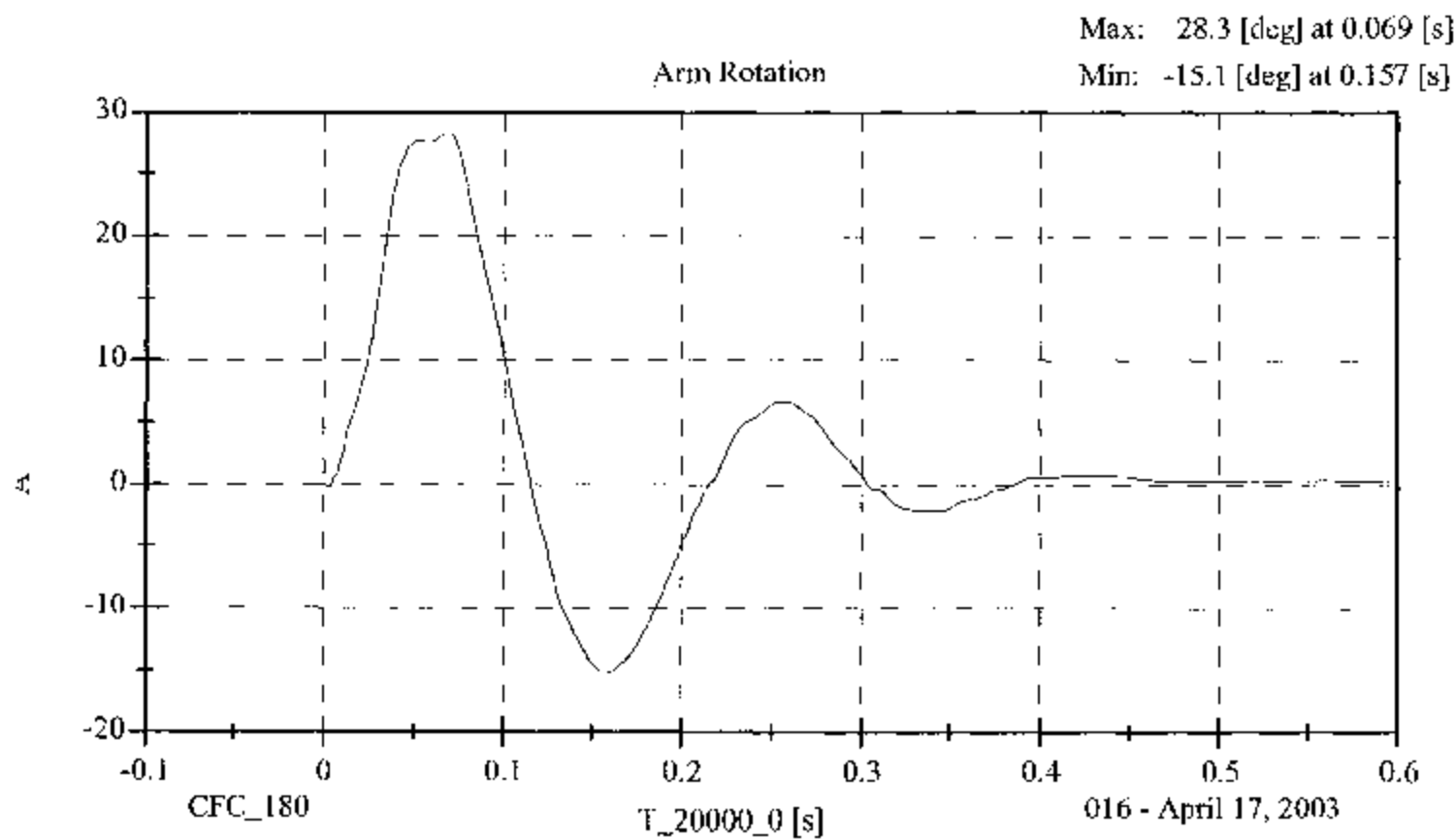
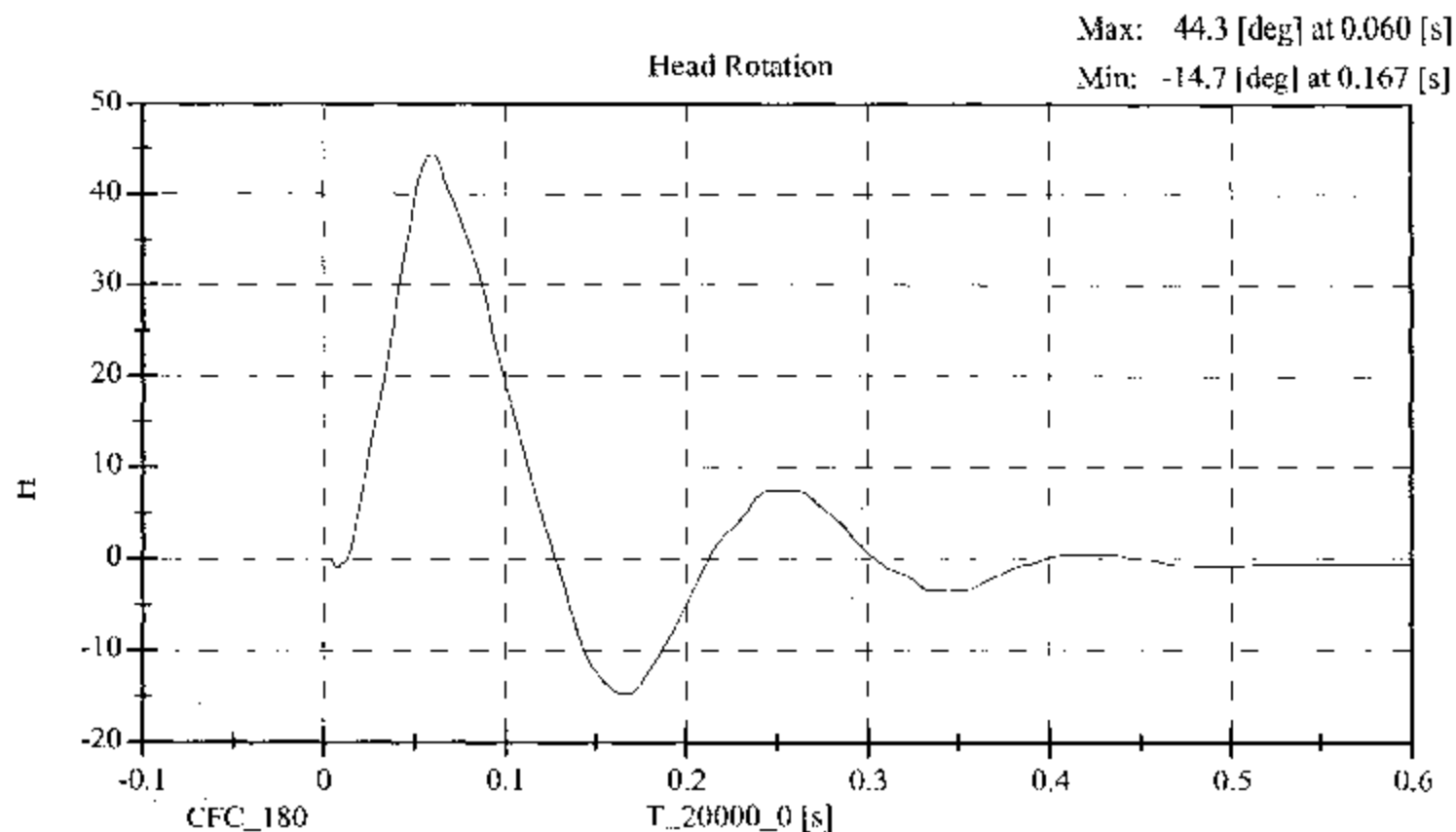
CONFIGURED FOR LEFT SIDE IMPACT

| | | |
|-----------------------------|--|--|
| SID Serial No.: <u>016</u> | Sequential Test Number: <u>1</u> | |
| Date: <u>April 17, 2003</u> | Laboratory Technician: <u>B. Swiecicki</u> | |

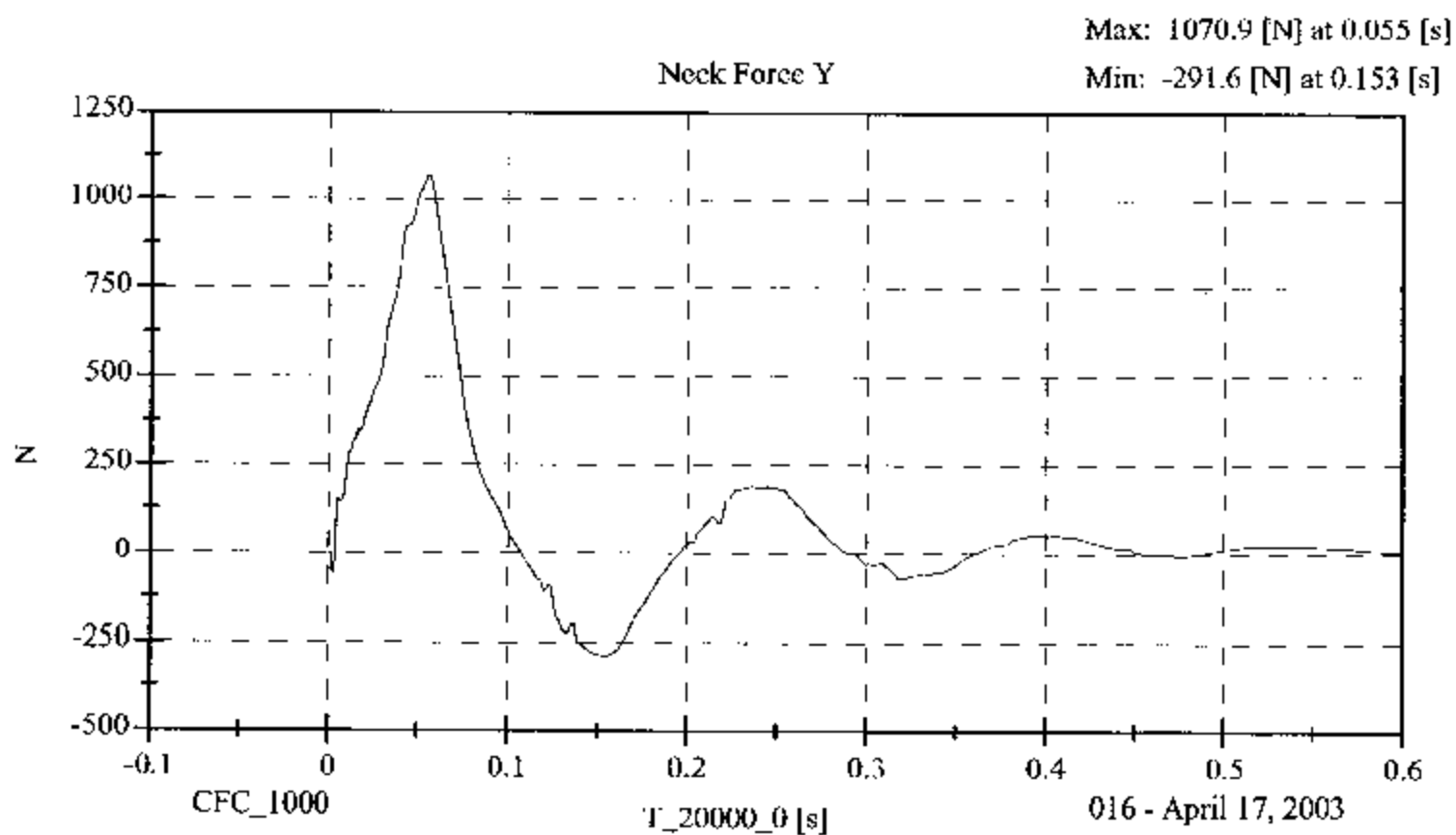
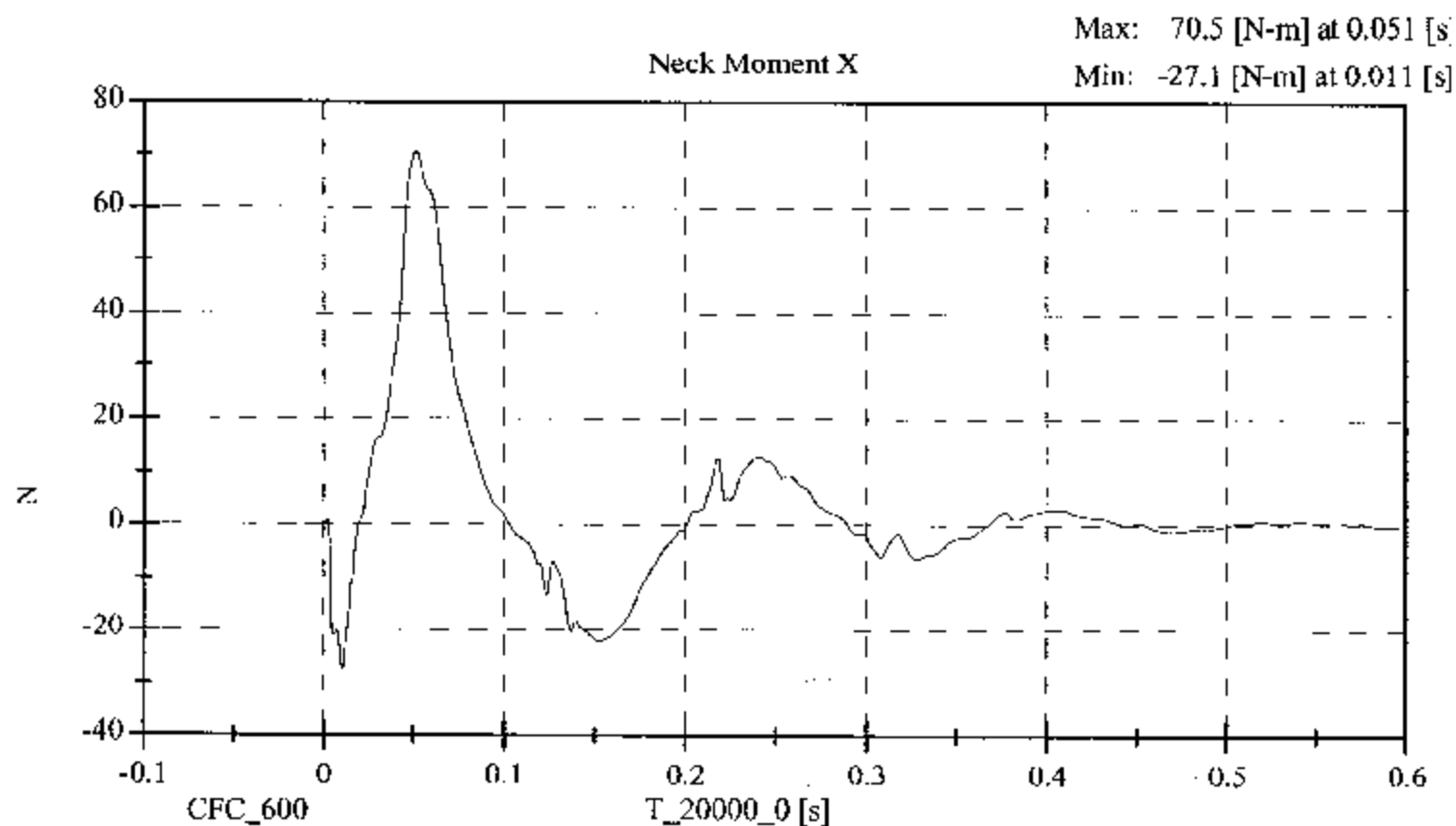
| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|---|---------------|--------------|
| TEMPERATURE (°C) | 20.6 - 22.2 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 33.0 |
| IMPACT VELOCITY (m/s) | 6.89 - 7.13 | 6.94 |
| PENDULUM DELTA V | | |
| DELTA V @ 10 ms (m/s) | 1.96 - 2.55 | 2.12 |
| DELTA V @ 20 ms (m/s) | 4.12 - 5.10 | 4.26 |
| DELTA V @ 30 ms (m/s) | 5.73 - 7.01 | 5.99 |
| DELTA V @ 40-70 ms (m/s) | 6.27 - 7.64 | 7.16 |
| D PLANE ROTATION | | |
| MAXIMUM ROTATION (deg) | 64 - 73 | 71.91 |
| ROT. ANGLE TIME to ZERO (ms) | 50 - 70 | 60.95 |
| MOMENT ABOUT THE OCCIPITAL CONDYLE | | |
| MAX OCCIPITAL MOMENT (Nm) | 88 - 108 | 88.76 |
| OCCIPITAL MOMENT DECAY (ms) | 40.0 - 60.0 | 51.85 |
| HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT | | |
| ROTATION wrt MOMENT (ms) | 0 - 20 | 8.70 |

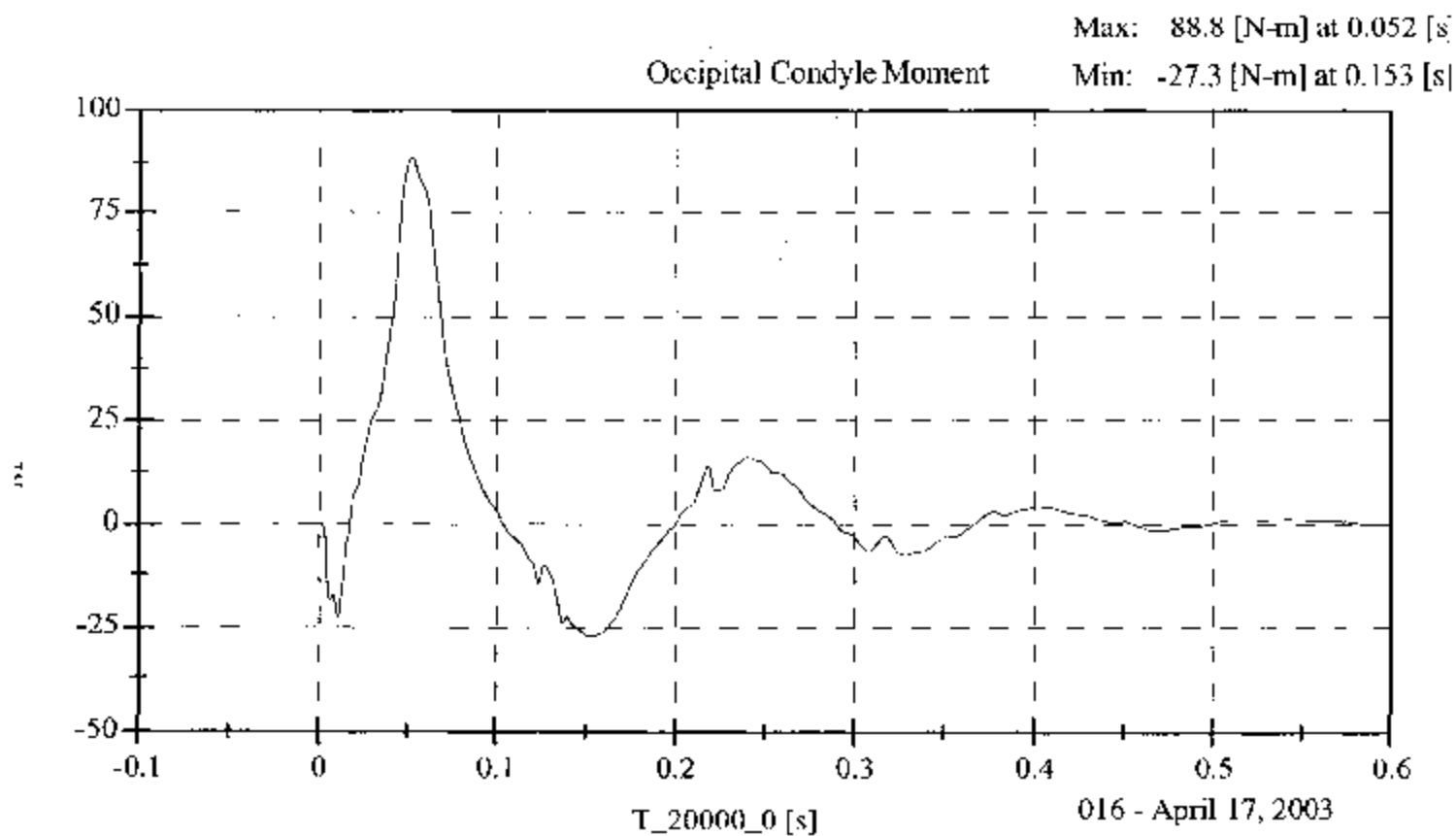
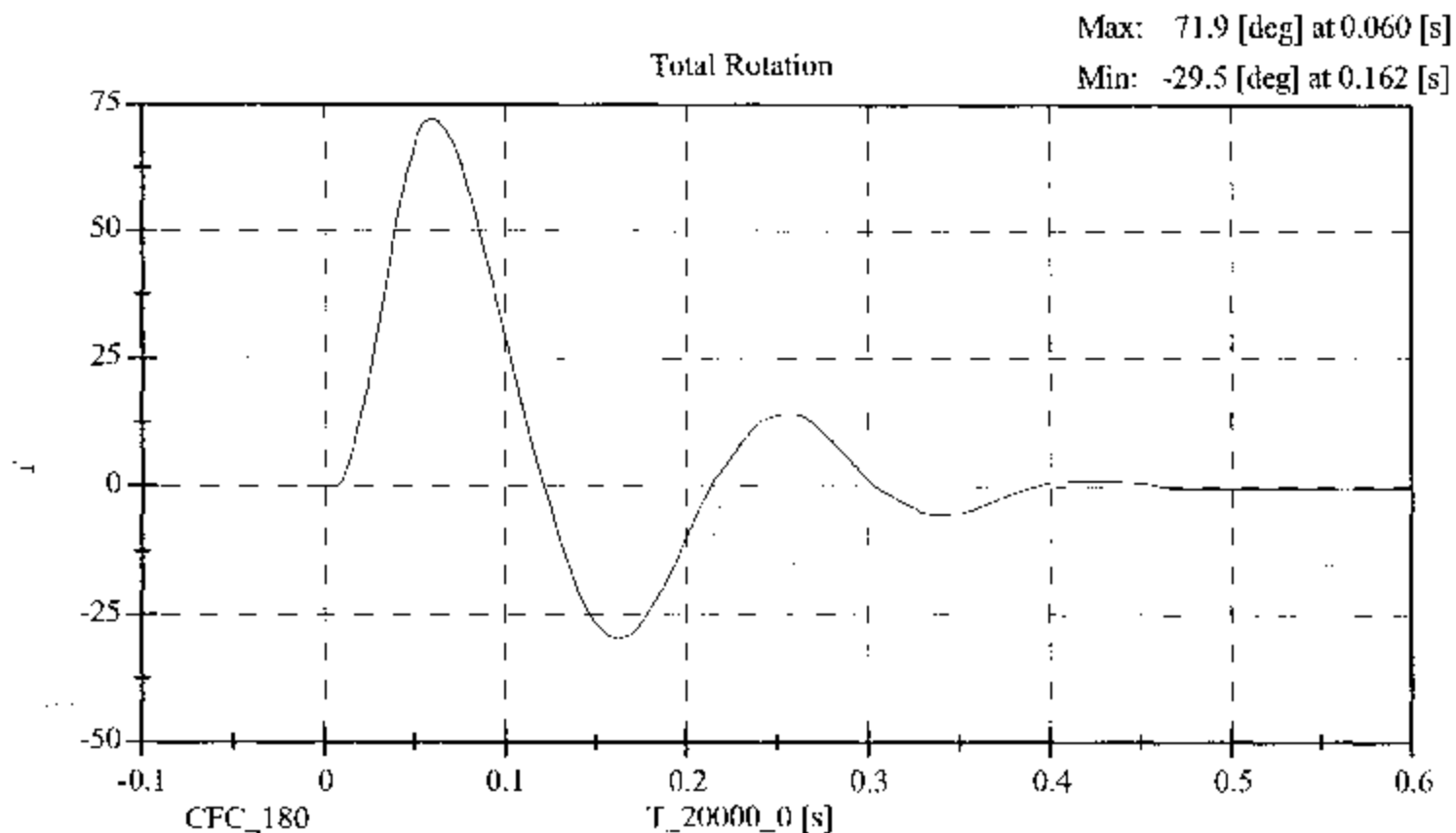
REMARKS: None





016 - April 17, 2003





ABDOMINAL COMPRESSION TEST**PRE-TEST**

(Test not required for SHD certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016

Sequential Test Number:

1

Date: April 17, 2003

Laboratory Technician:

B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|-----------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 33.0 |
| FORCE @ 13 mm (N) | 104 - 162 | 106.3 |
| FORCE @ 19 mm (N) | 163 - 221 | 165.0 |
| FORCE @ 25 mm (N) | 222 - 280 | 235.3 |
| FORCE @ 33 mm (N) | 325 - 391 | 334.1 |

REMARKS: None

Dummy S/N 016

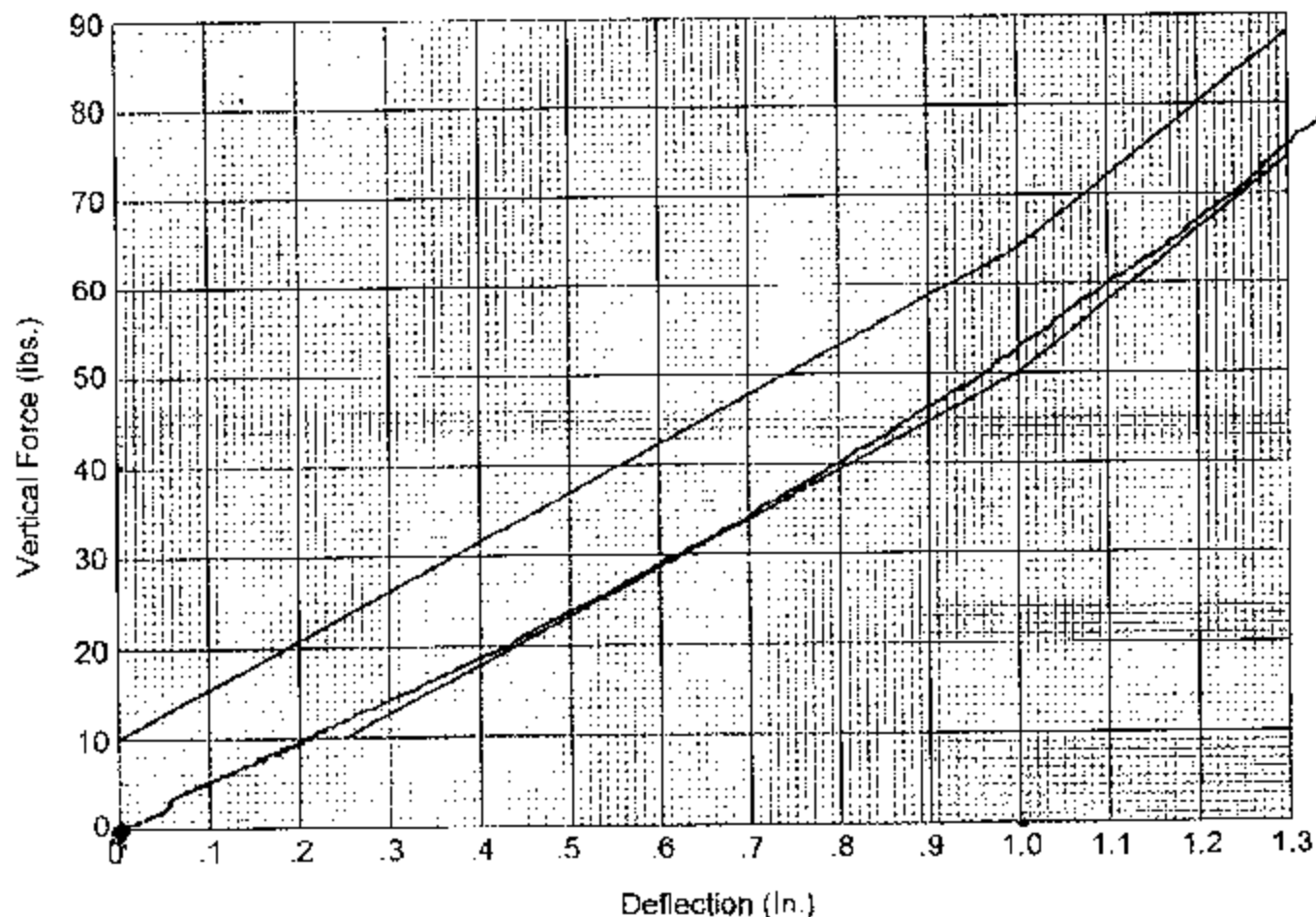
W/A

Date 4-17-03

Performed By [Signature]

Temp. 70°

Humidity 38%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
PRE-TEST
(Test not required for SID certification)

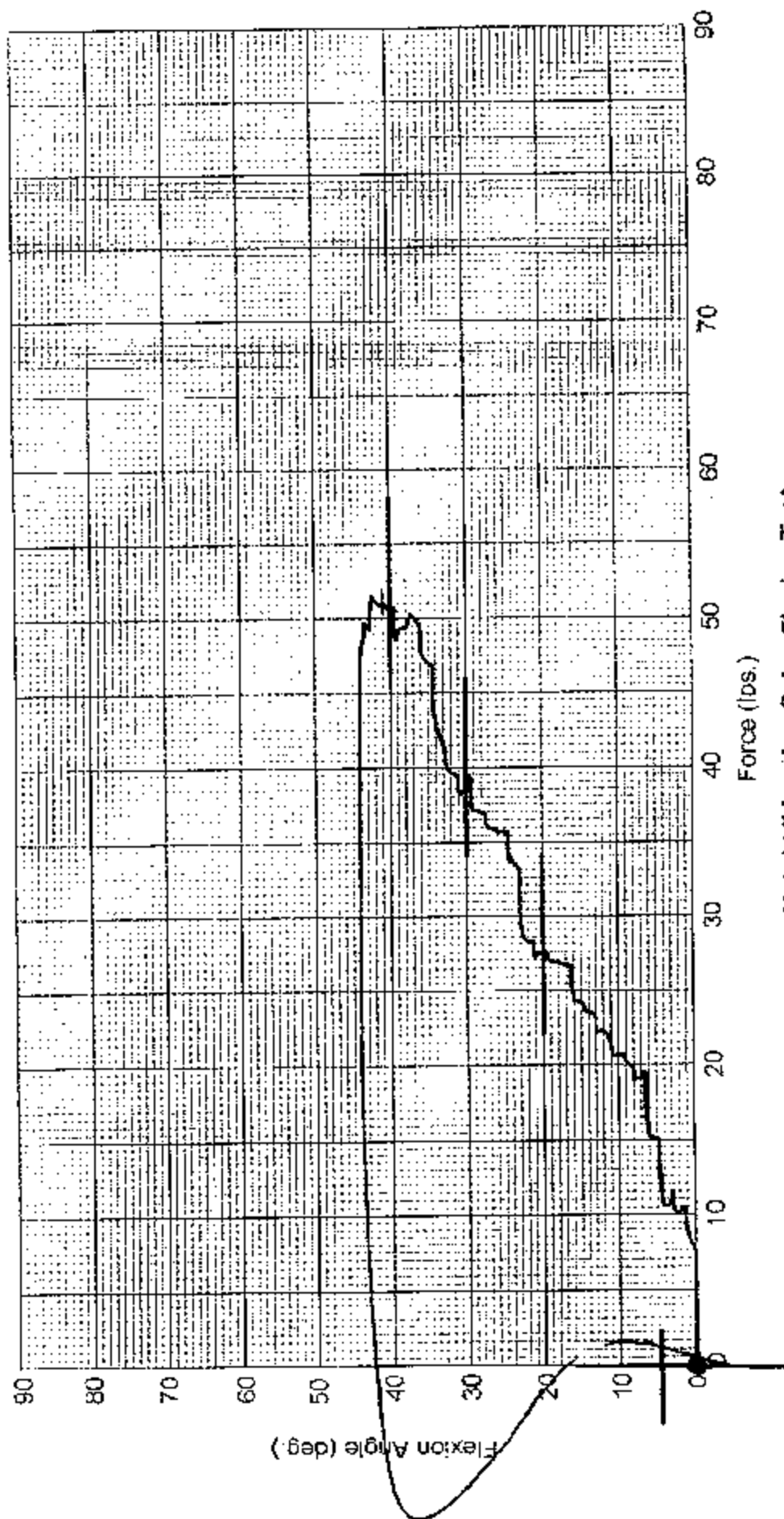
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 1
Date: April 17, 2003 Laboratory Technician: B. Swicicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|-----------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 33.0 |
| FORCE @ 0° (N) | 0 - 26.7 | 0.0 |
| FORCE @ 20° (N) | 97.8 - 151.2 | 120.5 |
| FORCE @ 30° (N) | 151.2 - 204.6 | 171.3 |
| FORCE @ 40° (N) | 204.6 - 258 | 223.3 |
| RETURN ANGLE | 12° max. | 3° |

REMARKS: None

Dummy S/N 016
 W/A _____
 Date 4-17-03
 Performed By RS
 Temp. 70°
 Humidity 33%



Hybrid II Lumbar Spine Flexion Test

PRE-TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 1
 Date: April 17, 2003 Laboratory Technician: B. Swiecicki

| PART | ITEMS CHECKED | COMMENTS |
|--------------|---|----------|
| SKIN | VISUAL INSPECTION | OK |
| HEAD | VISUAL, BALLAST, ACCELEROMETER MOUNT | OK |
| NECK | VISUAL, CABLE TORQUE | OK |
| SPINE BOX | VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT | OK |
| RIB CAGE | VISUAL, MEASURE, STIFFENERS | OK |
| STERNUM | VISUAL | OK |
| LUMBAR SPINE | VISUAL | OK |
| ABDOMEN | VISUAL | OK |
| PELVIS | VISUAL, PALPATE, ACCELEROMETER MOUNT | OK |
| UPPER LEGS | VISUAL | OK |
| KNEES | VISUAL, STOPS, INSERTS | OK |
| LOWER LEGS | VISUAL, RANGE OF MOTION | OK |
| ANKLES | VISUAL, RANGE OF MOTION | OK |
| FEET | VISUAL, RANGE OF MOTION | OK |
| JOINTS | 1 TO 2 g RANGE | OK |
| OTHER | NONE | - |

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID H3 NO.: 015

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015

Sequential Test Number:

1

Date: April 28, 2003

Laboratory Technician:

B. Swiecicki

| TEST | COMMENTS |
|-----------------------------|--------------------------|
| EXTERNAL DIMENSIONS | Passed all requirements. |
| LATERAL THORAX IMPACT TEST | Passed all requirements. |
| LATERAL PELVIS IMPACT TEST | Passed all requirements. |
| HEAD DROP TEST* | Passed all requirements. |
| LATERAL NECK BEND TEST* | Passed all requirements. |
| ABDOMINAL COMPRESSION TEST* | Passed all requirements. |
| LUMBAR FLEXION TEST* | Passed all requirements. |

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID 113 Serial No.: 015 Sequential Test Number: 1
Date: April 28, 2003 Laboratory Technician: B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|-------------------------------------|---------------|--------------|
| SH- Seated Height (mm) | 889 - 909 | 902 |
| RH- Rib Height (mm) | 502 - 520 | 511 |
| HP- Hip Pivot Height (mm) | 99 ref. | 99 |
| RD- Rib from Back Line (mm) | 229 - 241 | 239 |
| KPL- Knee Pivot from Back Line (mm) | 511 - 526 | 521 |
| KV- Knee Pivot to Floor (mm) | 490 - 505 | 495 |
| HW- Hip Width (mm) | 356 - 391 | 371 |

REMARKS: None

**LATERAL THORAX IMPACT TEST
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015

Sequential Test Number:

1

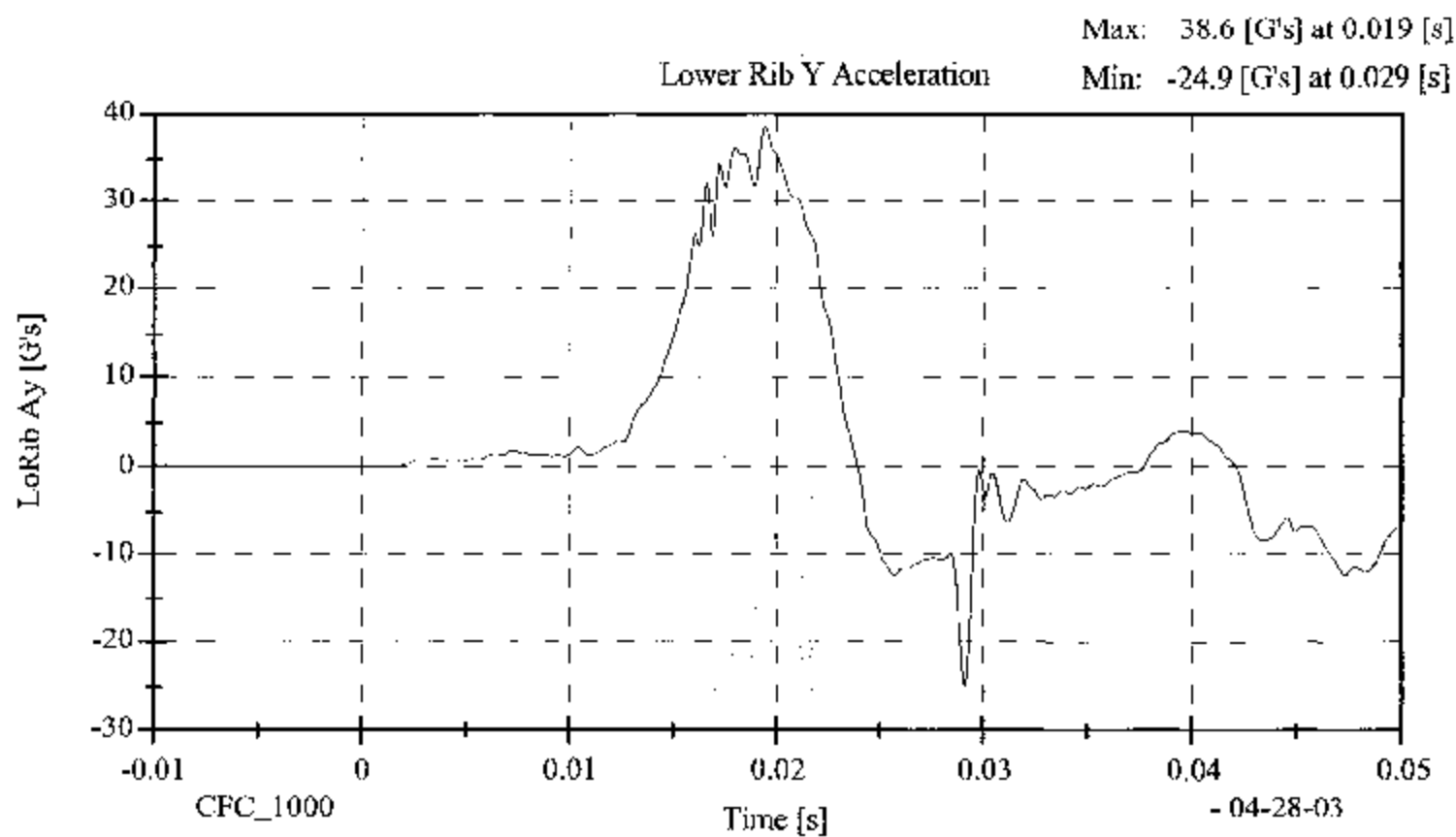
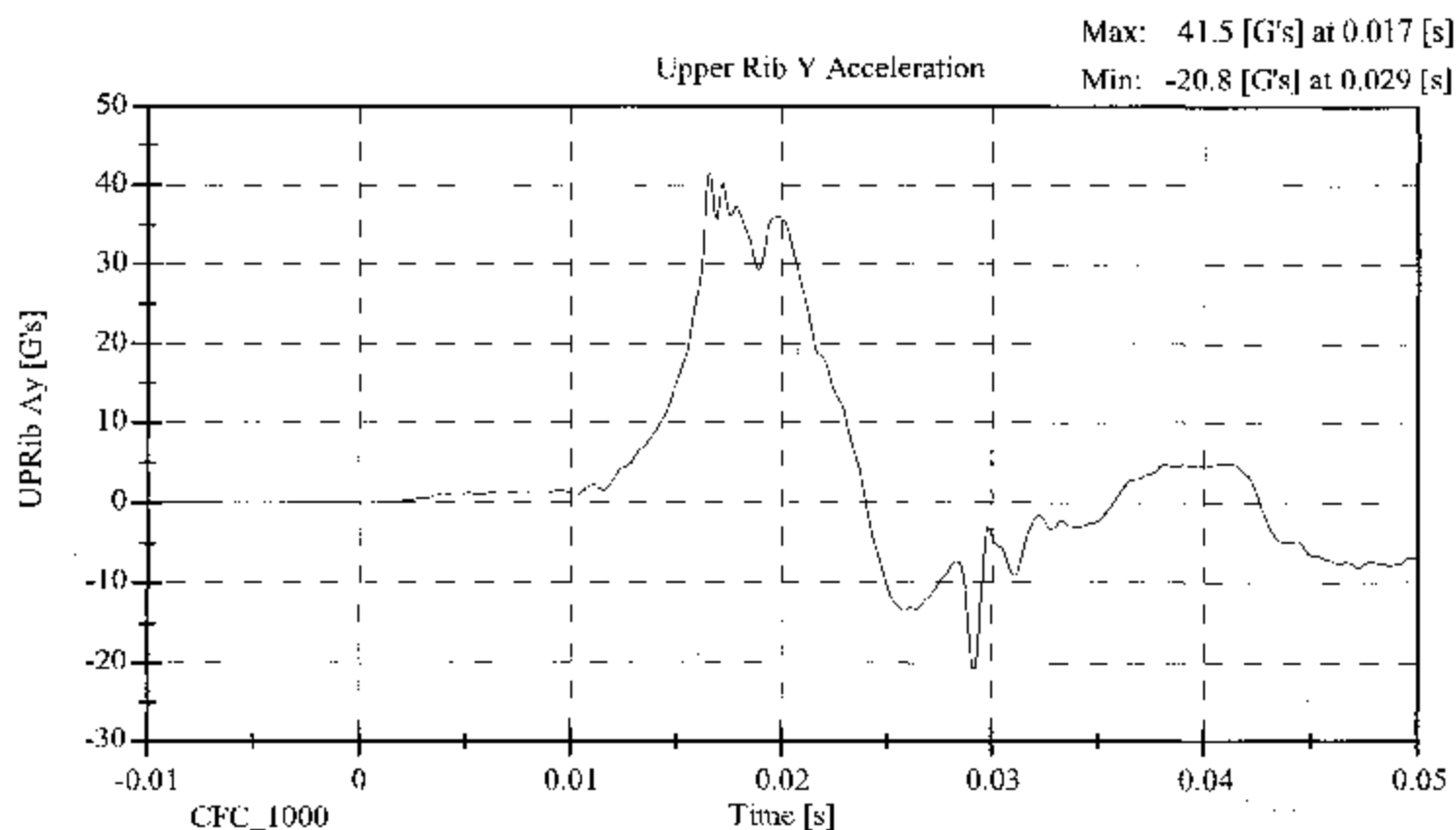
Date: April 28, 2003

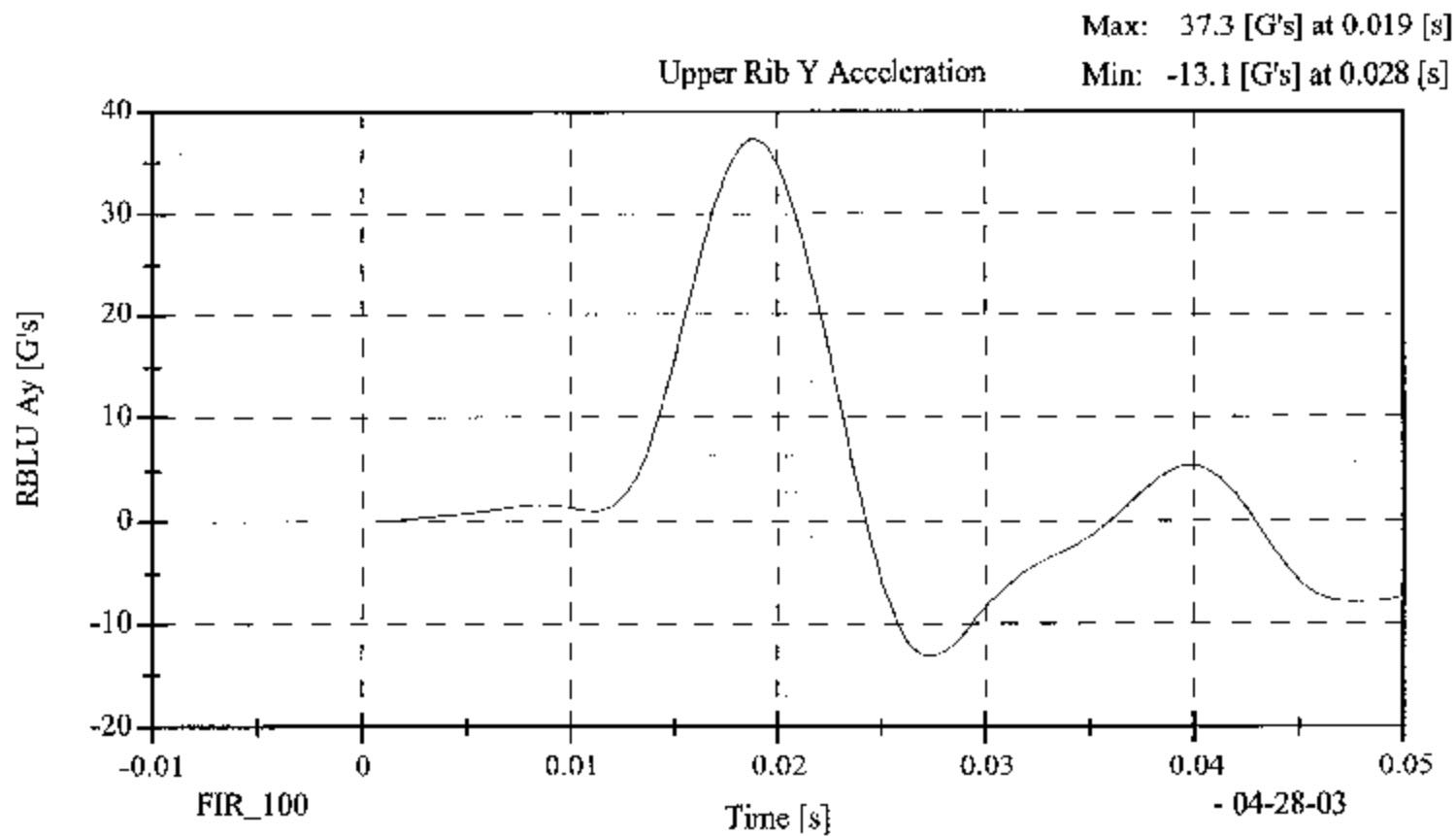
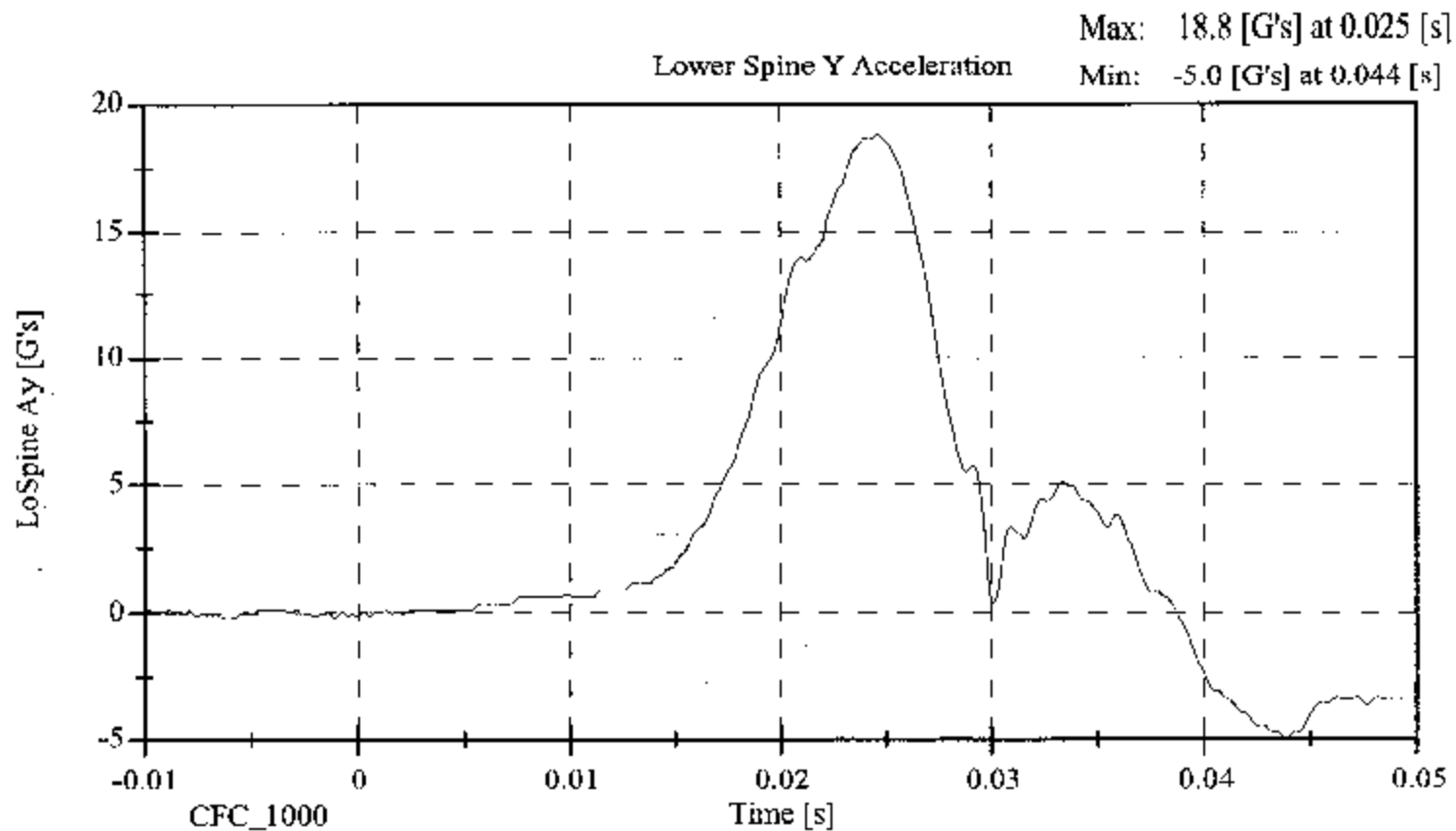
Laboratory Technician:

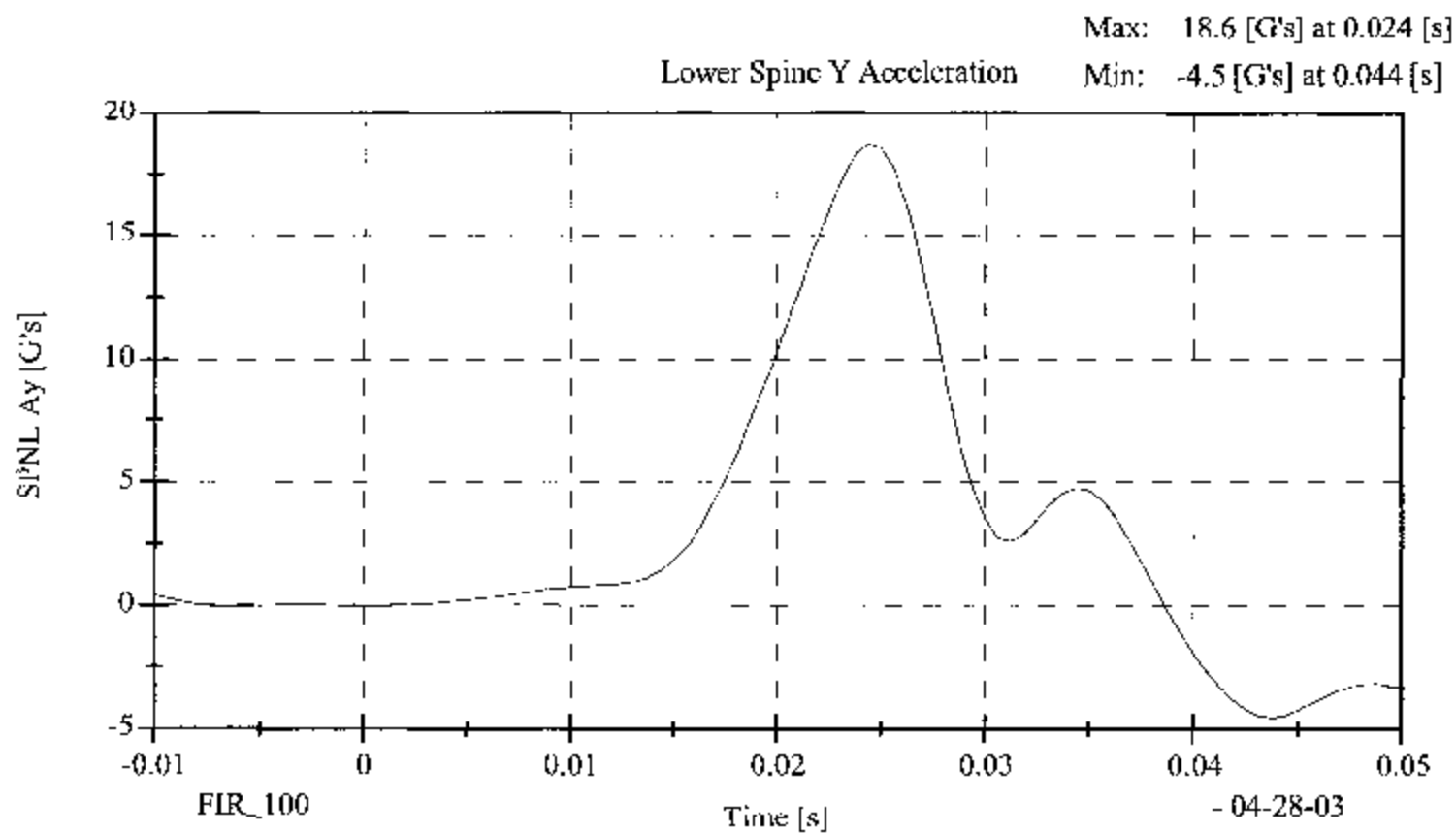
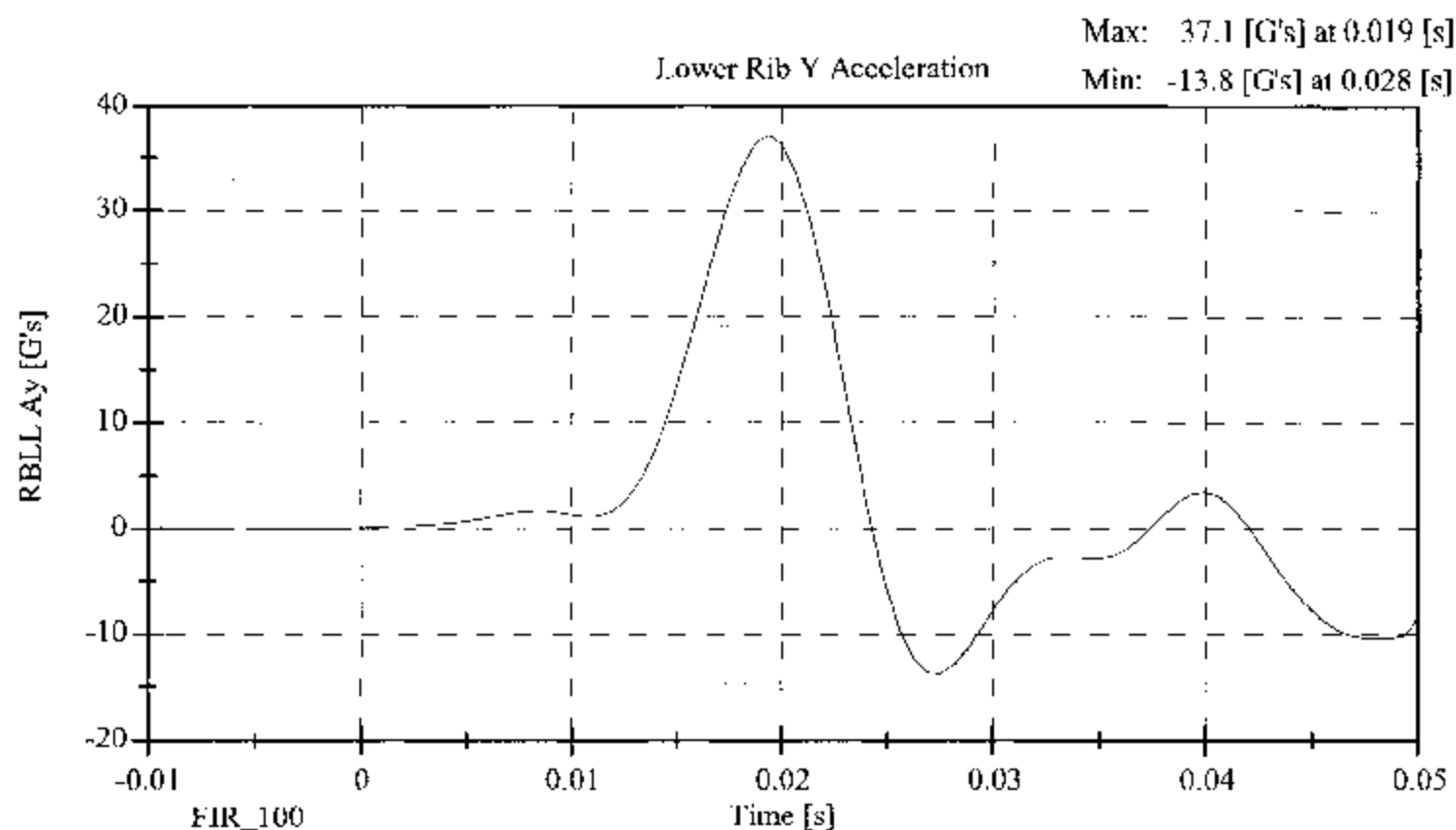
B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|-----------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 31.0 |
| PROBE SPEED (m/s) | 4.27 - 4.33 | 4.28 |
| UPPER RIB (g's) | 37 - 46 | 37.31 |
| LOWER RIB (g's) | 37 - 46 | 37.07 |
| LOWER SPINE (g's) | 15 - 22 | 18.65 |

REMARKS: None







**LATERAL PELVIS IMPACT TEST
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015

Sequential Test Number:

1

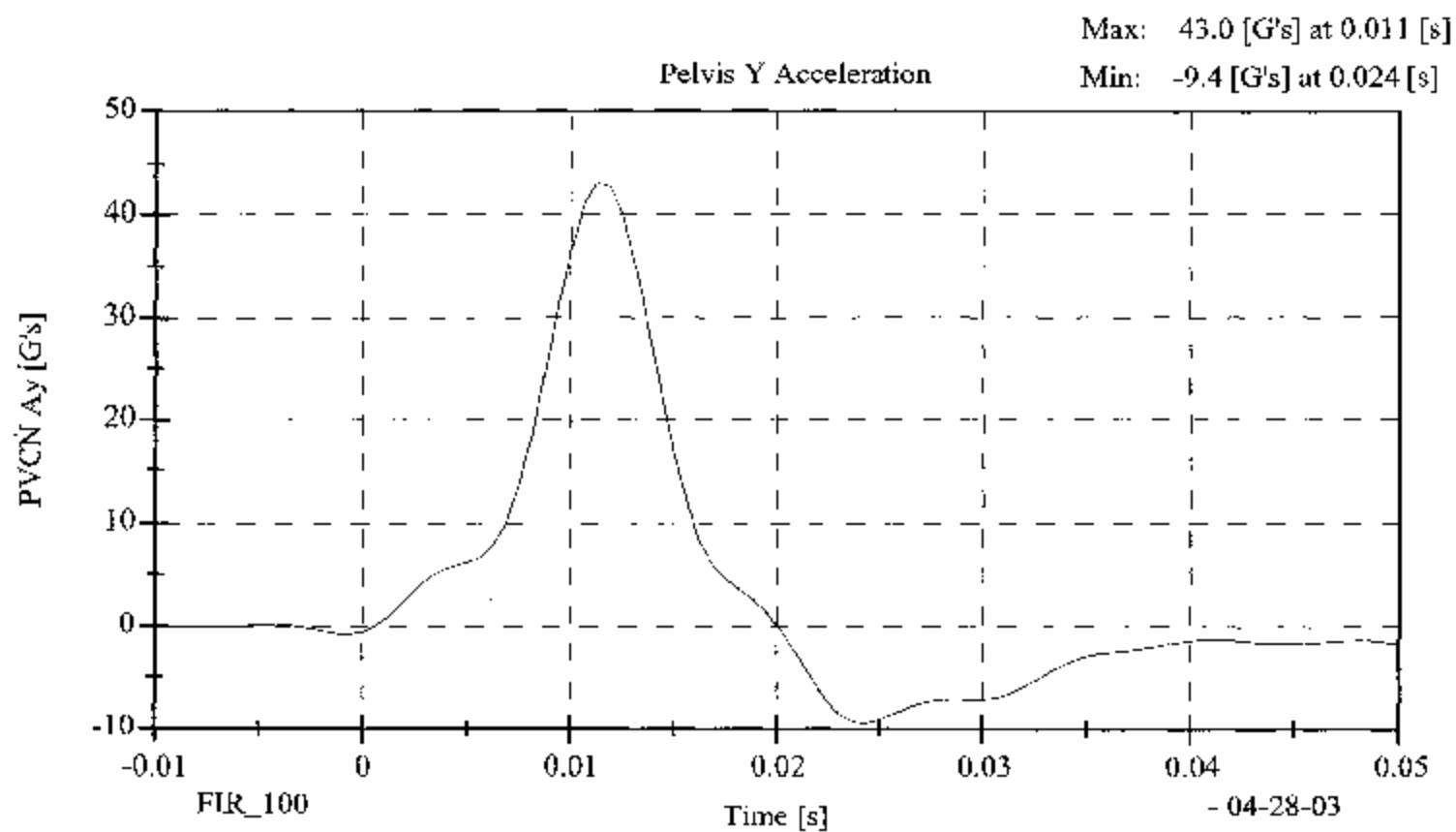
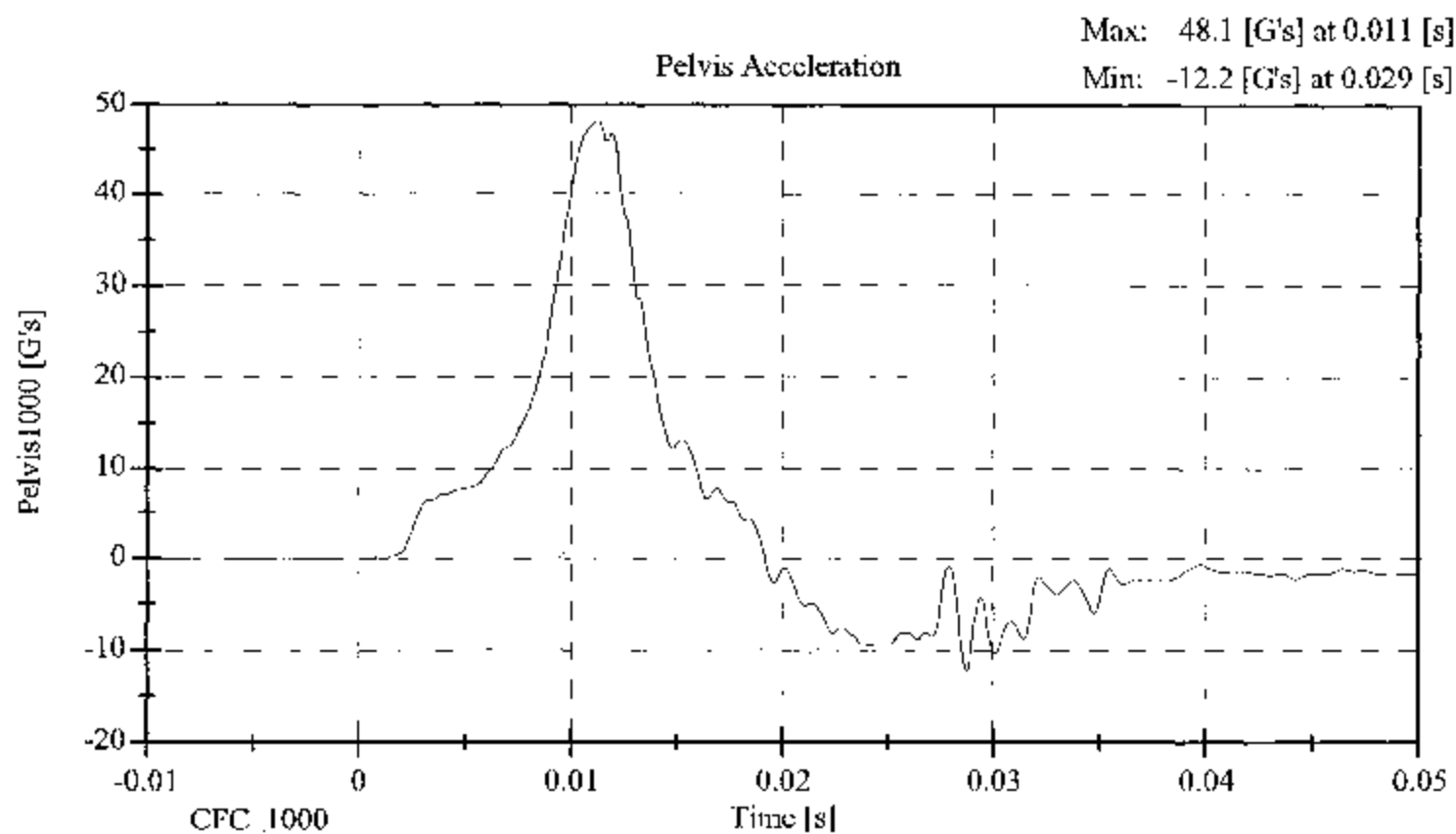
Date: April 28, 2003

Laboratory Technician:

B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|---------------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 31.0 |
| PROBE SPEED (m/s) | 4.27 - 4.33 | 4.28 |
| PELVIS ACCELERATION (g's) | 40 - 60 | 43.04 |

REMARKS: None



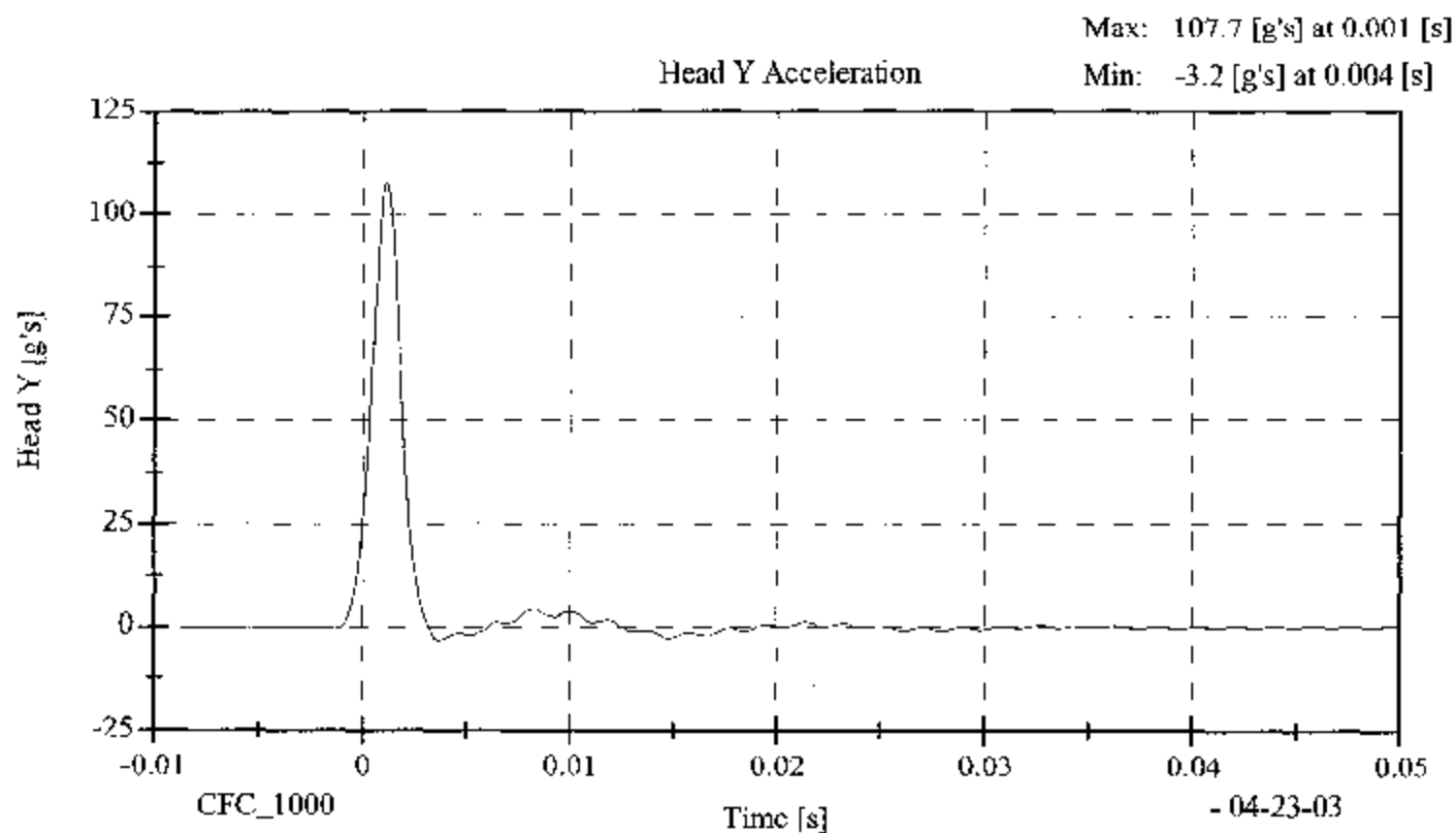
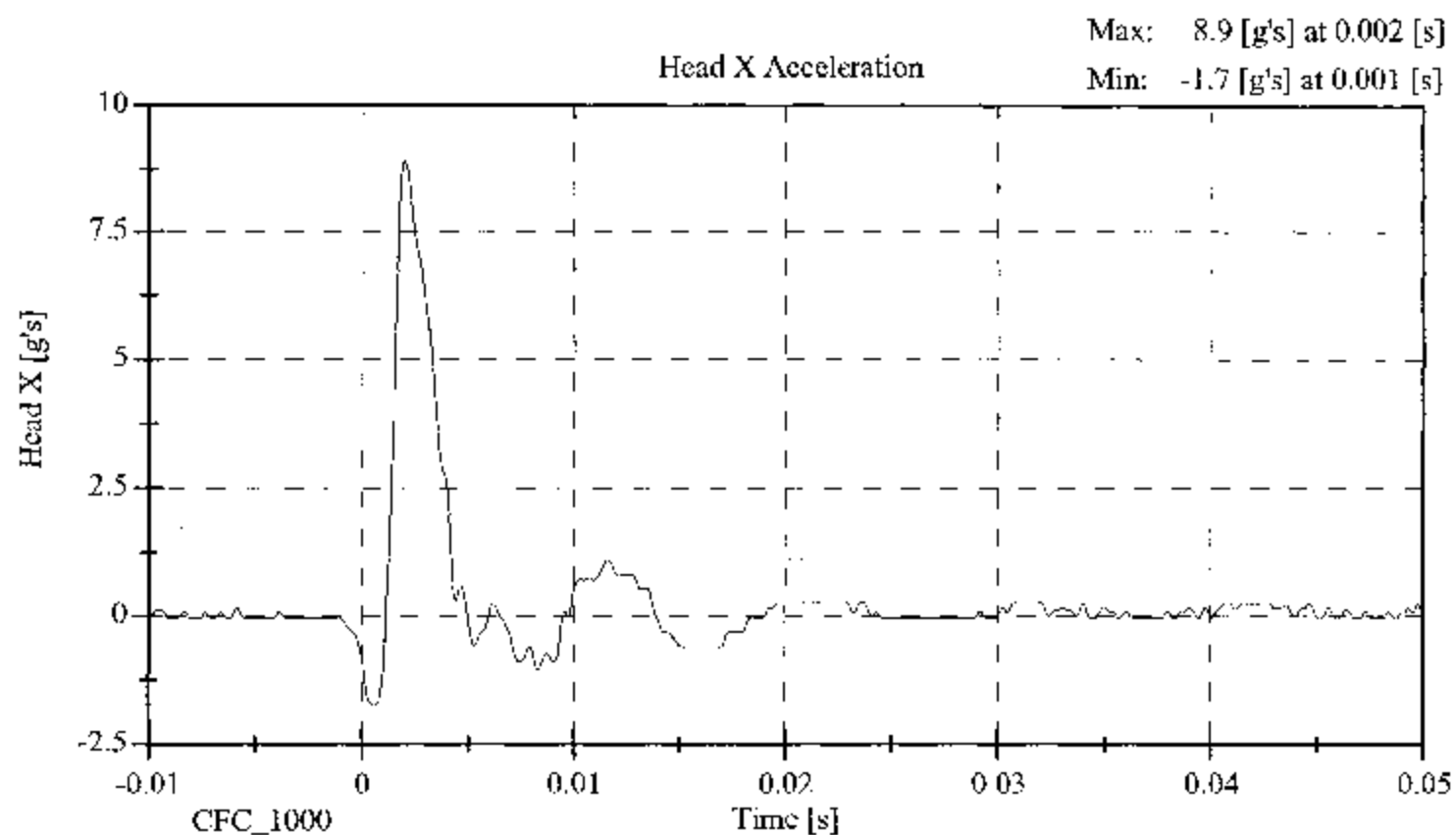
HEAD DROP TEST
POST-TEST
(Test not required for SID certification)

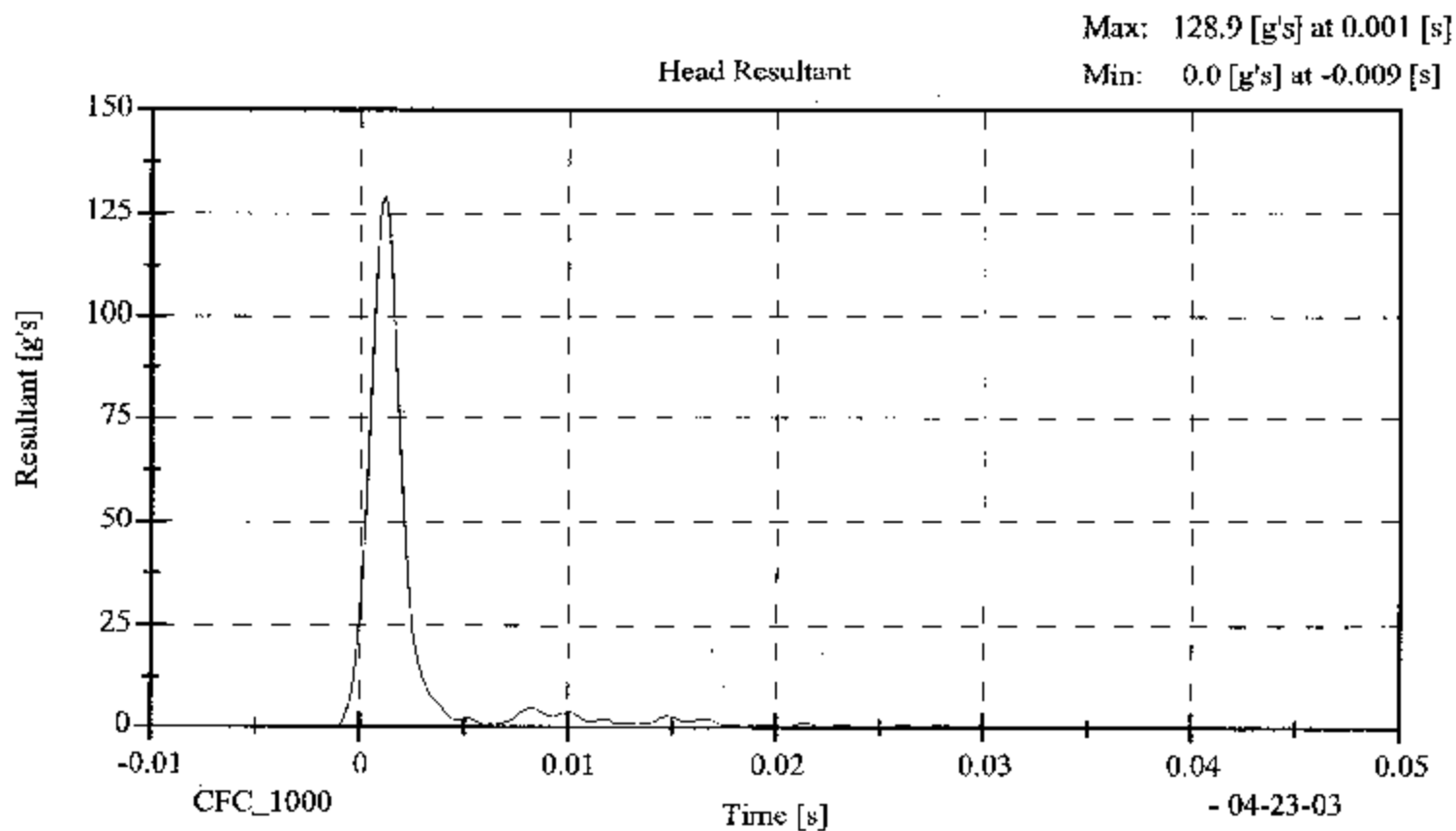
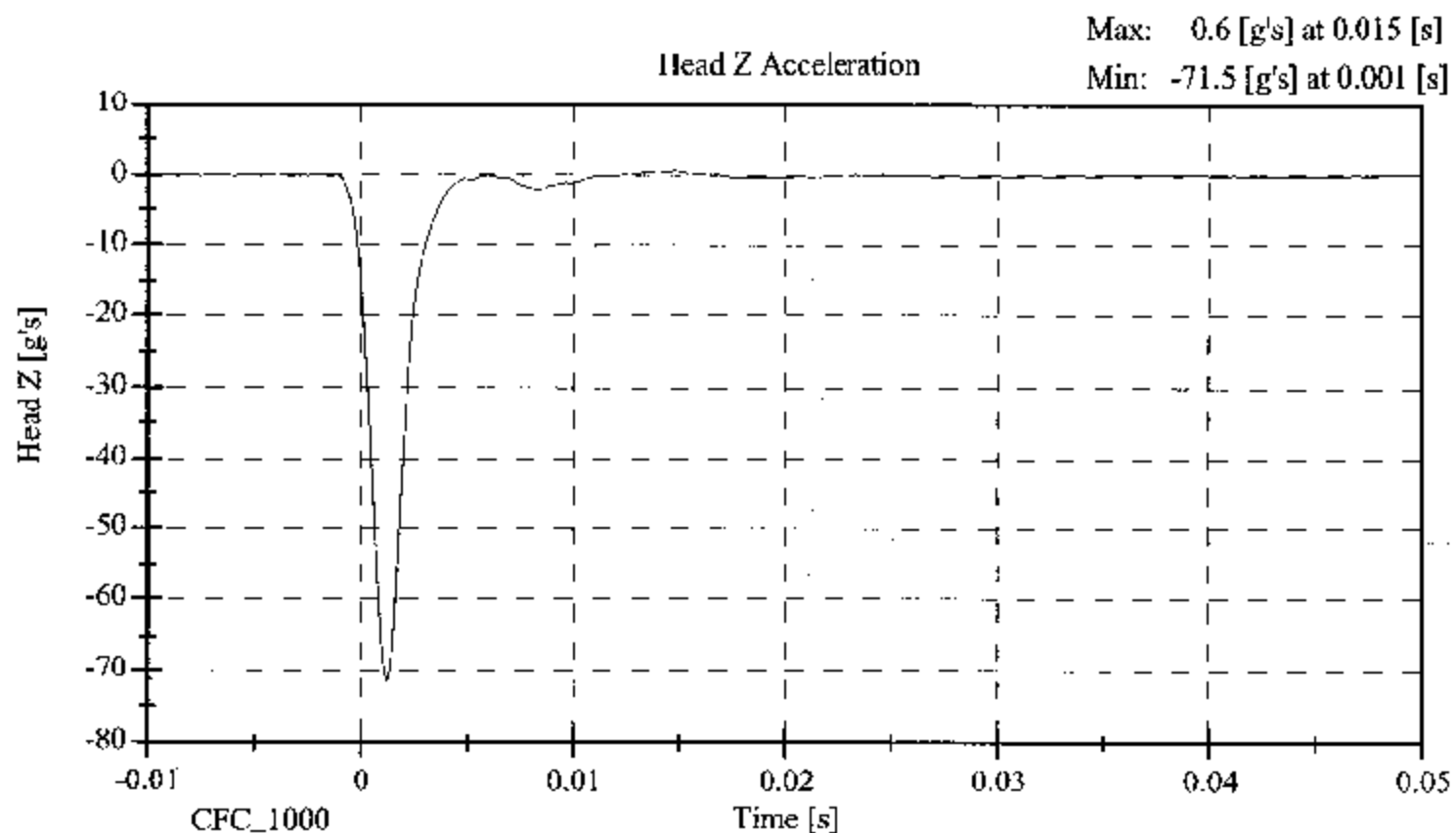
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 015 Sequential Test Number: 1
Date: April 23, 2003 Laboratory Technician: B. Swieticki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|----------------------------------|------------------|--------------|
| TEMPERATURE (°C) | 20.6 – 22.2 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 – 70 | 38.0 |
| PEAK RESULTANT ACCELERATION (Gs) | 120 – 150 | 128.88 |
| PEAK LATERAL ACCELERATION (Gs) | Not to Exceed 15 | 8.90 |
| CURVE PERCENT NONMODAL (%) | < 15 | 3.73 |

REMARKS: None





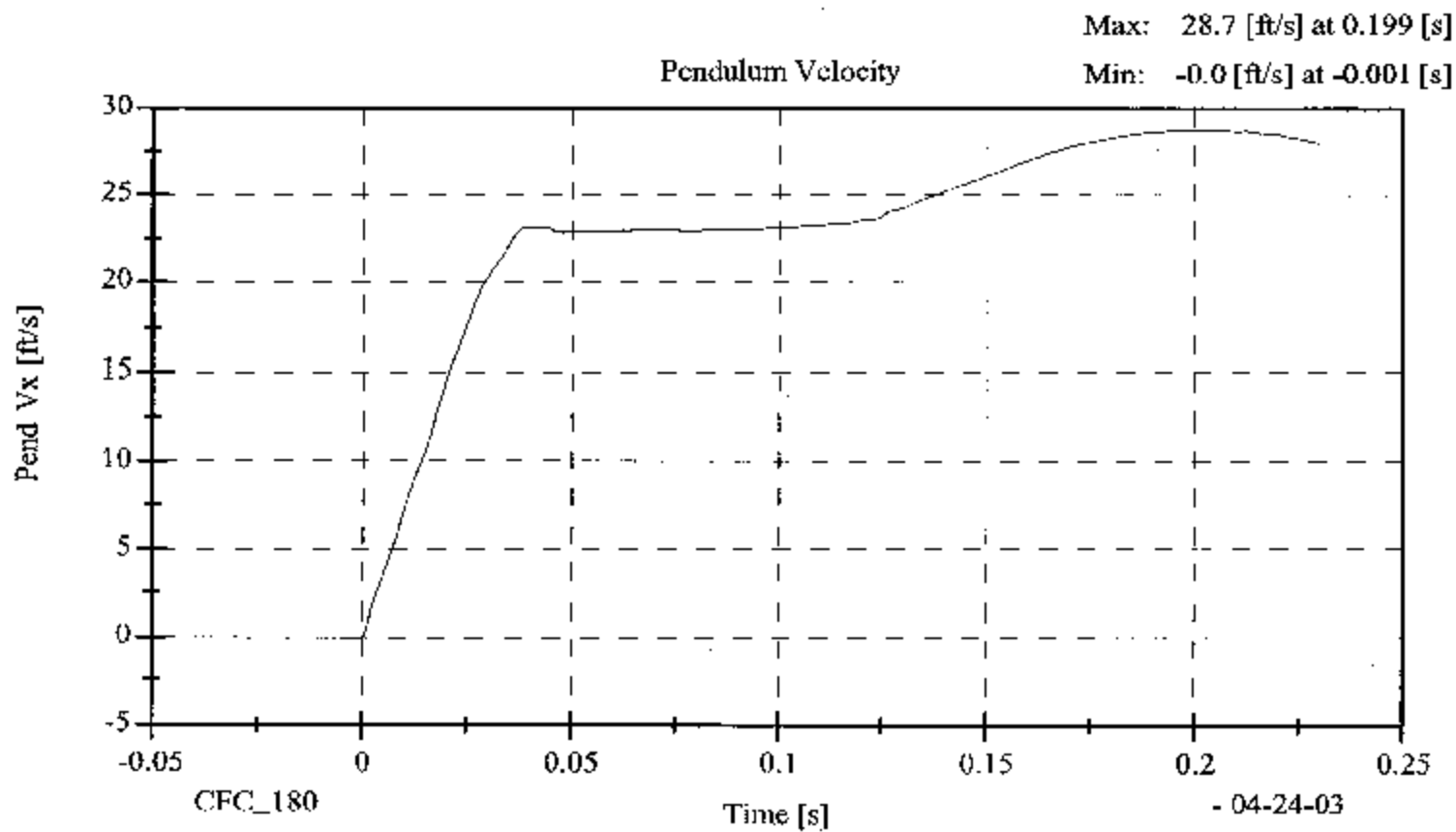
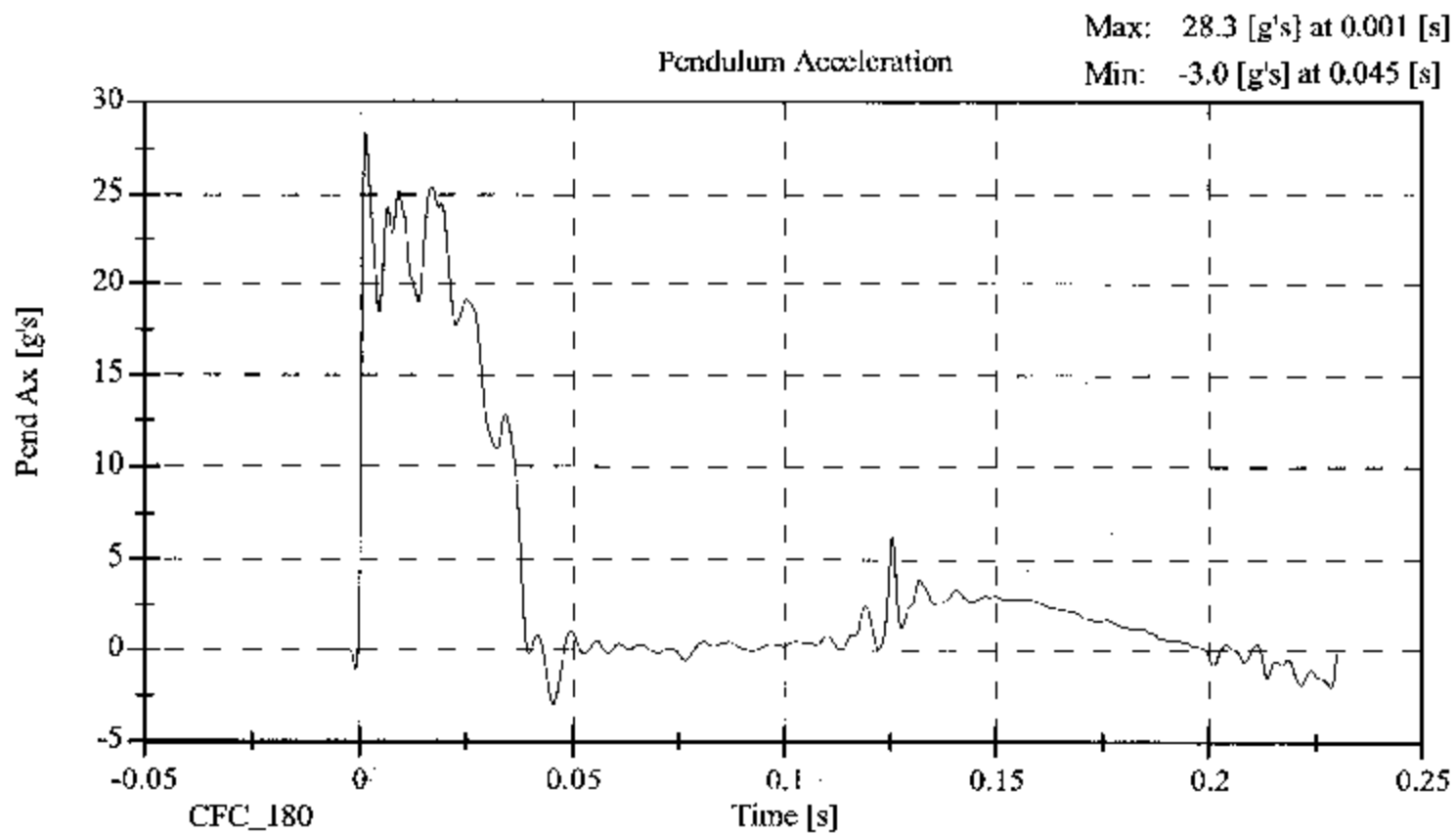
LATERAL NECK BENDING TEST
POST-TEST
(Test not required for SID certification)

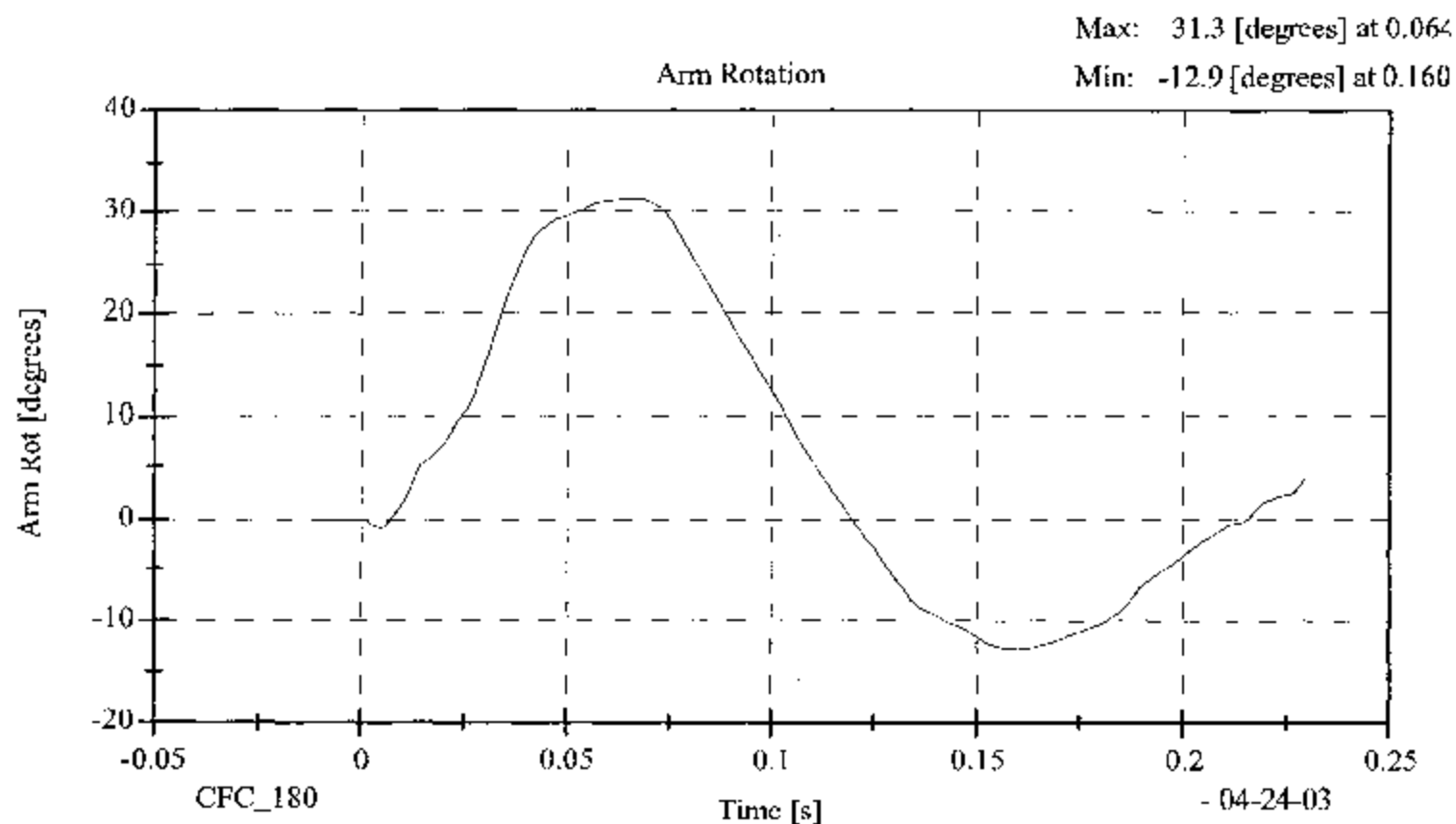
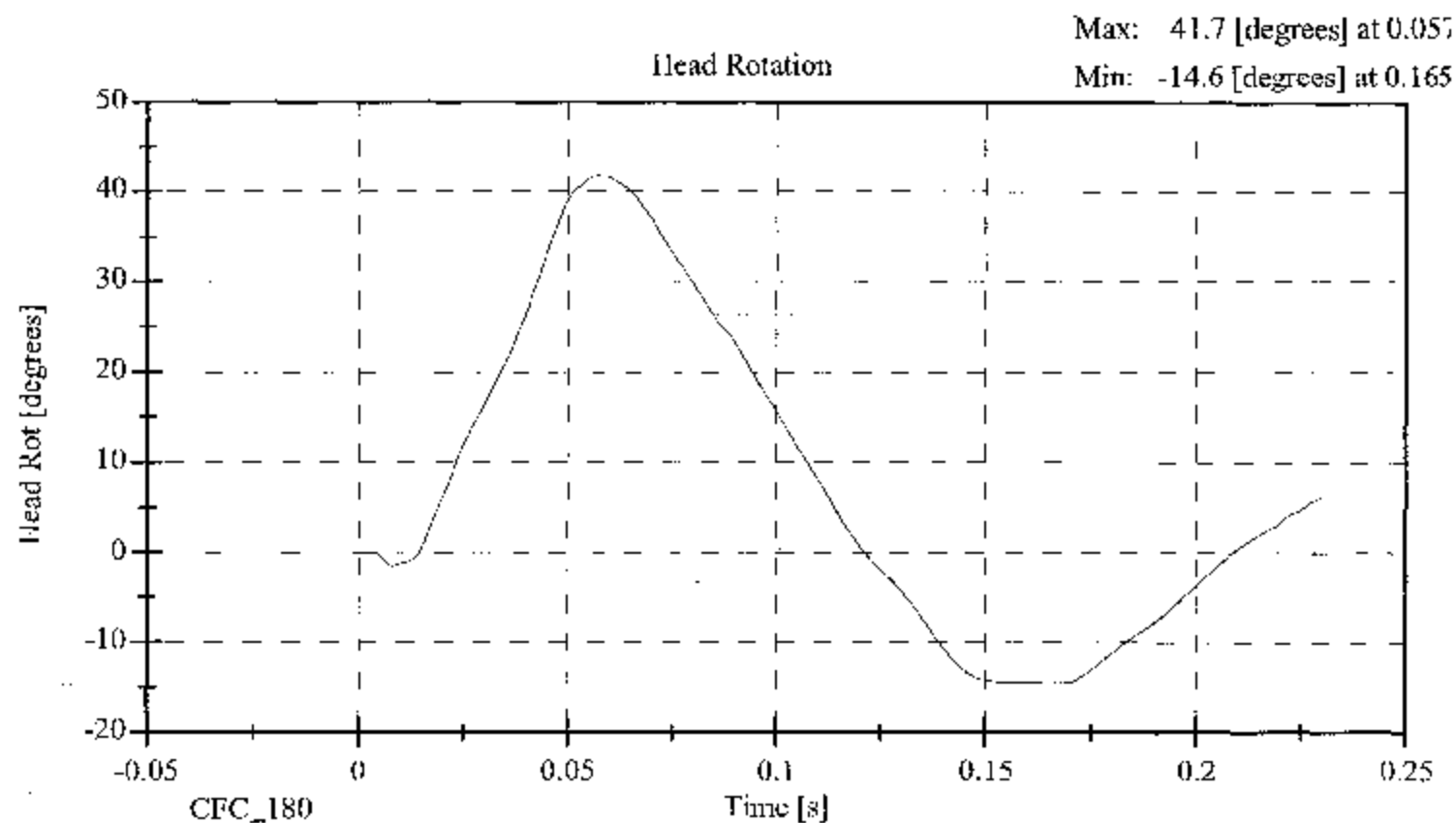
CONFIGURED FOR LEFT SIDE IMPACT

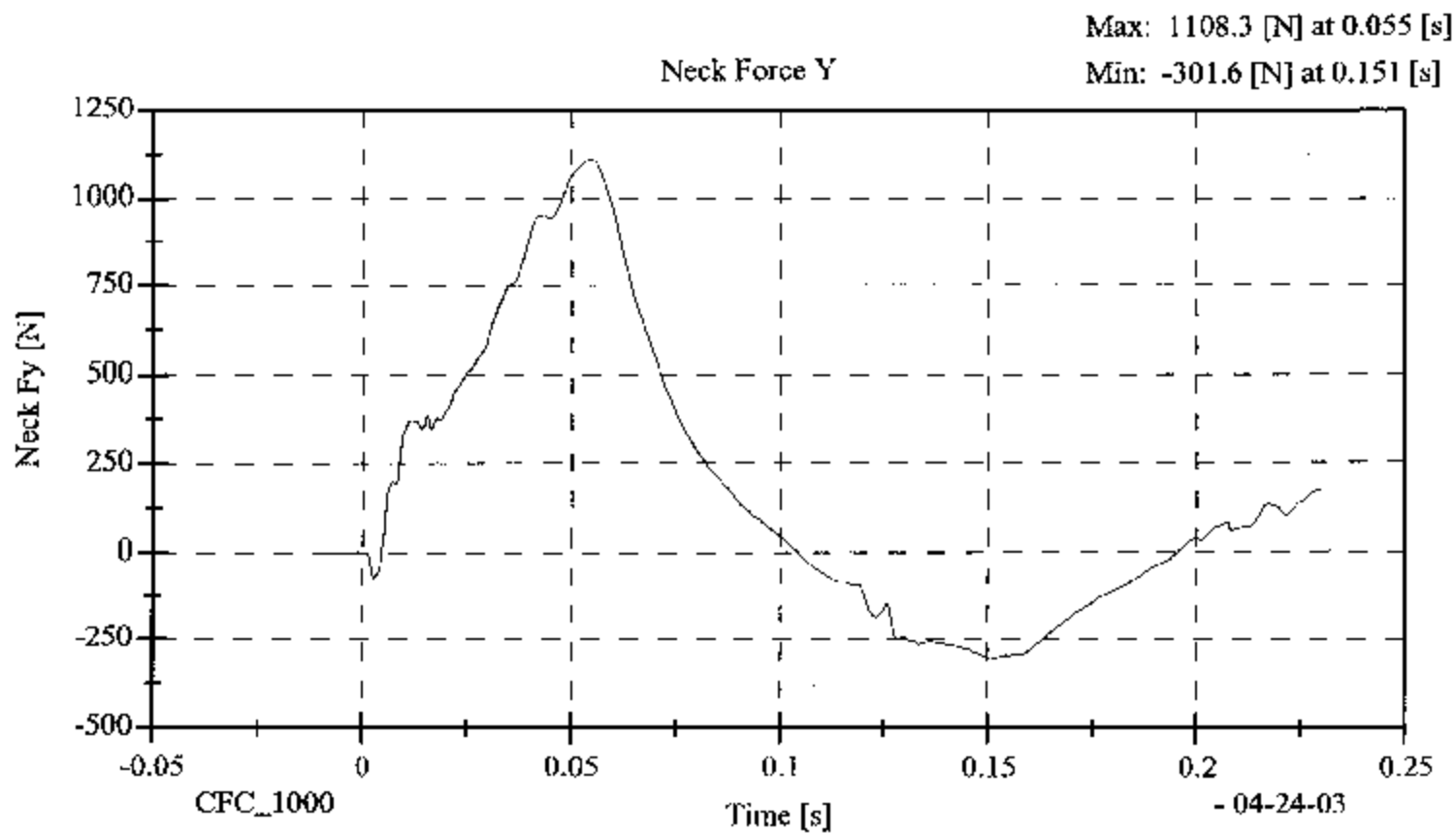
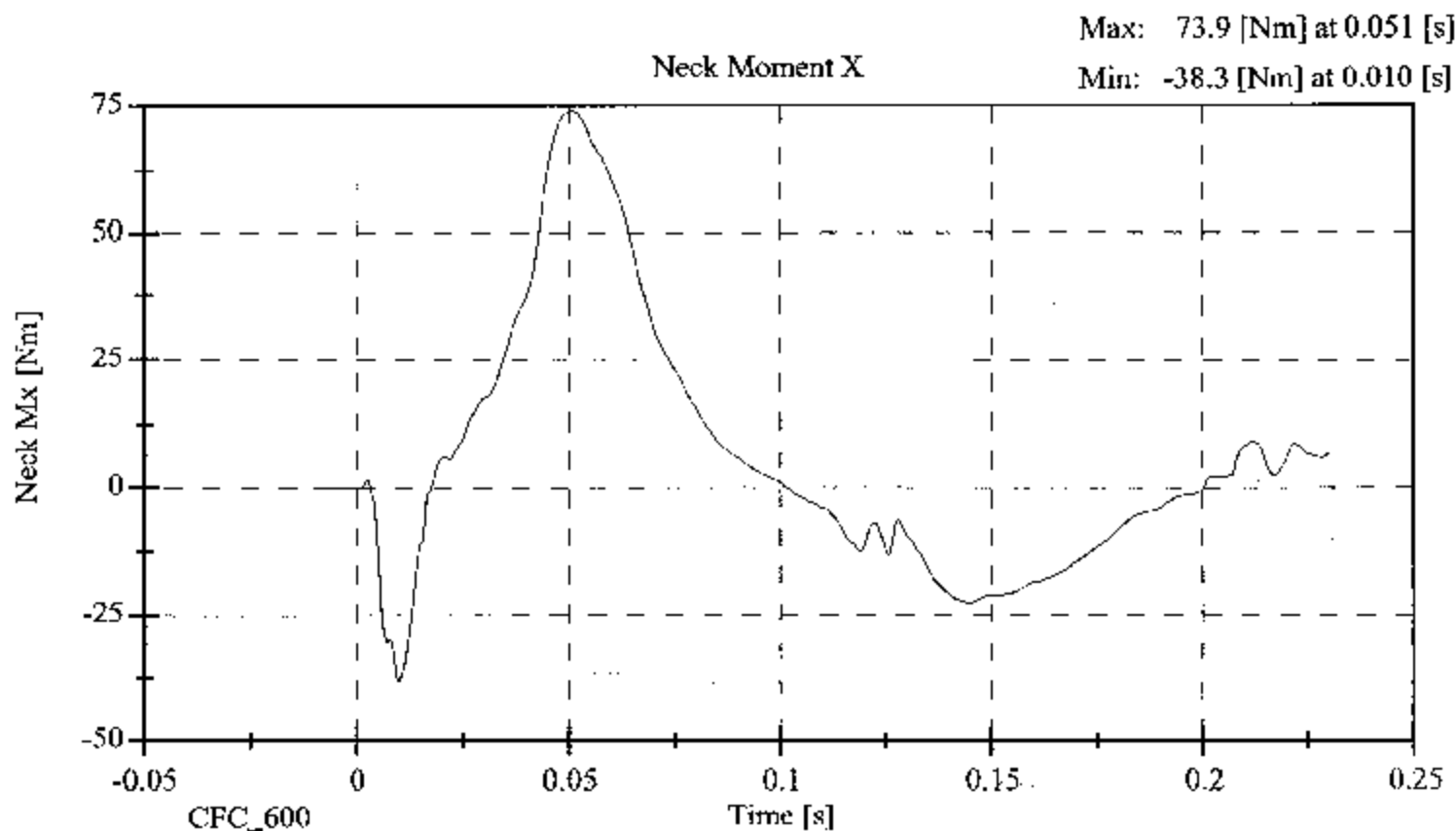
SID Serial No.: 015 Sequential Test Number: 1
Date: April 24, 2003 Laboratory Technician: B. Swiecicki

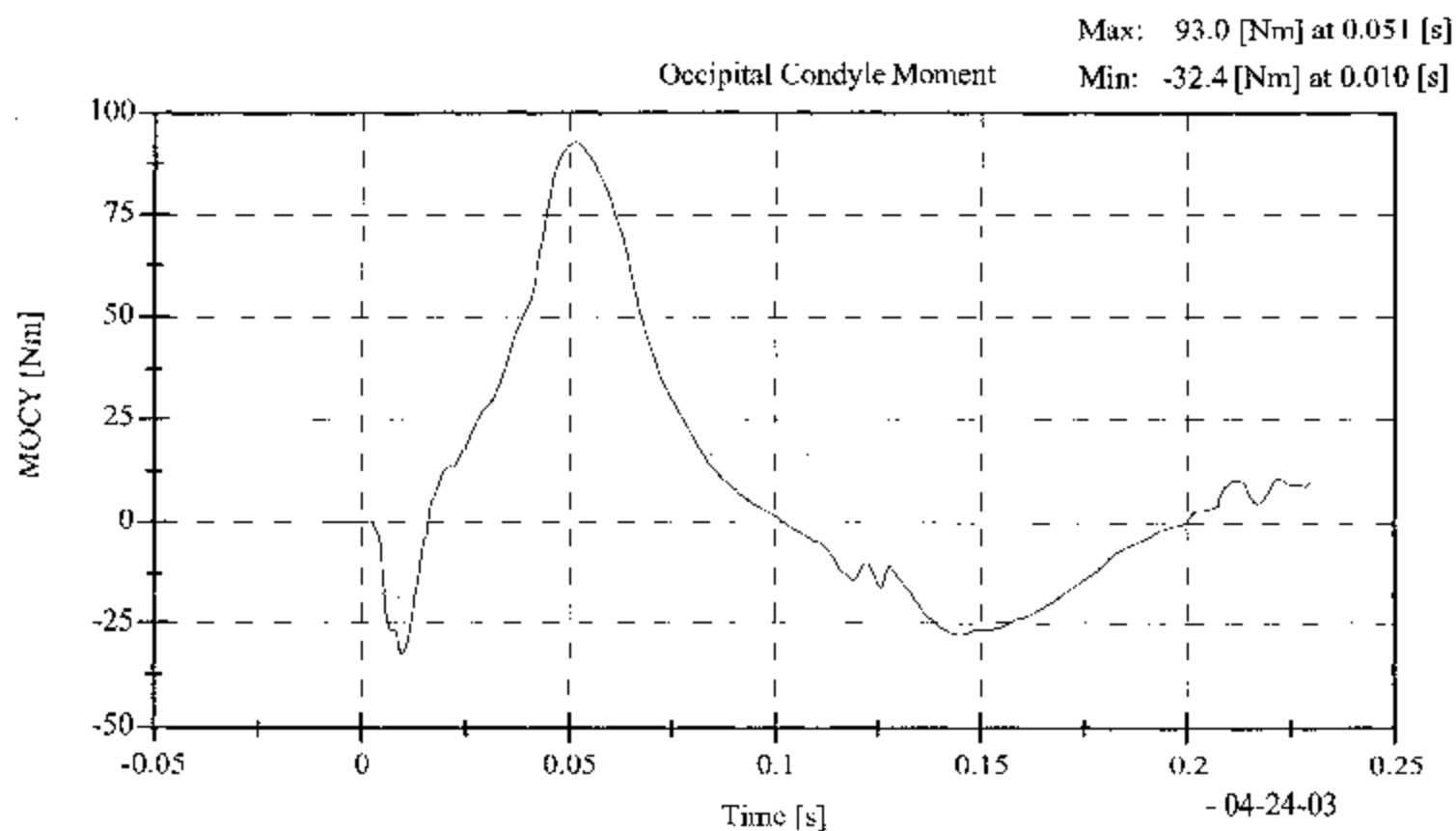
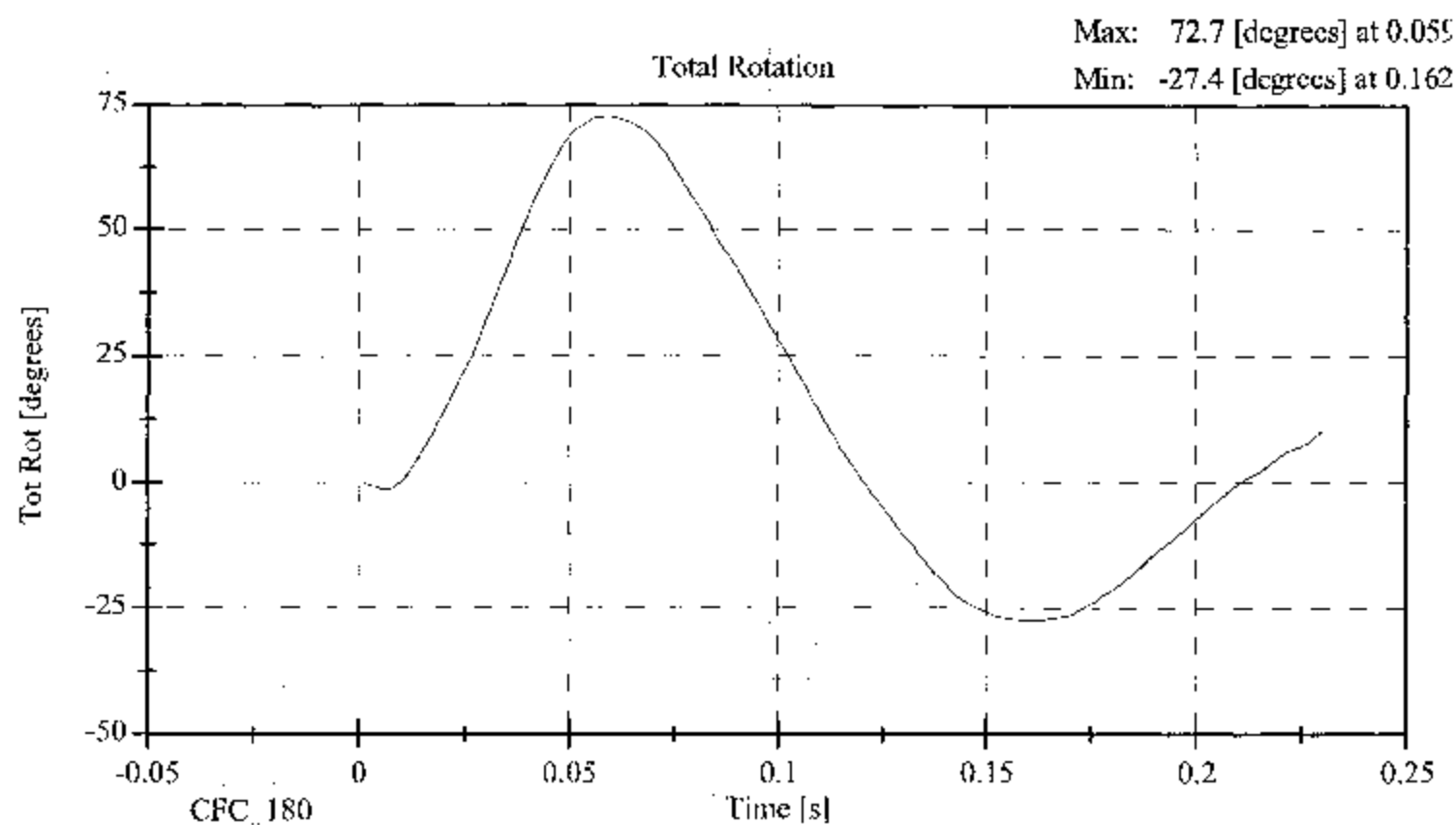
| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|---|---------------|--------------|
| TEMPERATURE (°C) | 20.6 - 22.2 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 33.0 |
| IMPACT VELOCITY (m/s) | 6.89 - 7.13 | 6.92 |
| PENDULUM DELTA V | | |
| DELTA V @ 10 ms (m/s) | 1.96 - 2.55 | 2.21 |
| DELTA V @ 20 ms (m/s) | 4.12 - 5.10 | 4.44 |
| DELTA V @ 30 ms (m/s) | 5.73 - 7.01 | 6.19 |
| DELTA V @ 40-70 ms (m/s) | 6.27 - 7.64 | 7.18 |
| D PLANE ROTATION | | |
| MAXIMUM ROTATION (deg) | 64 - 78 | 72.73 |
| ROT. ANGLE TIME to ZERO (ms) | 50 - 70 | 61.20 |
| MOMENT ABOUT THE OCCIPITAL CONDYLE | | |
| MAX OCCIPITAL MOMENT (Nm) | 88 - 108 | 92.99 |
| OCCIPITAL MOMENT DECAY (ms) | 40.0 - 60.0 | 51.00 |
| HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT | | |
| ROTATION wrt MOMENT (ms) | 0 - 20 | 8.10 |

REMARKS: None









**ABDOMINAL COMPRESSION TEST
POST TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015

Sequential Test Number:

1

Date: April 28, 2003

Laboratory Technician:

B. Swieczicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|-----------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 35.0 |
| FORCE @ 13 mm (N) | 104 - 162 | 118.8 |
| FORCE @ 19 mm (N) | 163 - 221 | 186.8 |
| FORCE @ 25 mm (N) | 222 - 280 | 265.1 |
| FORCE @ 33 mm (N) | 325 - 391 | 379.0 |

REMARKS: None

Dummy S/N 015

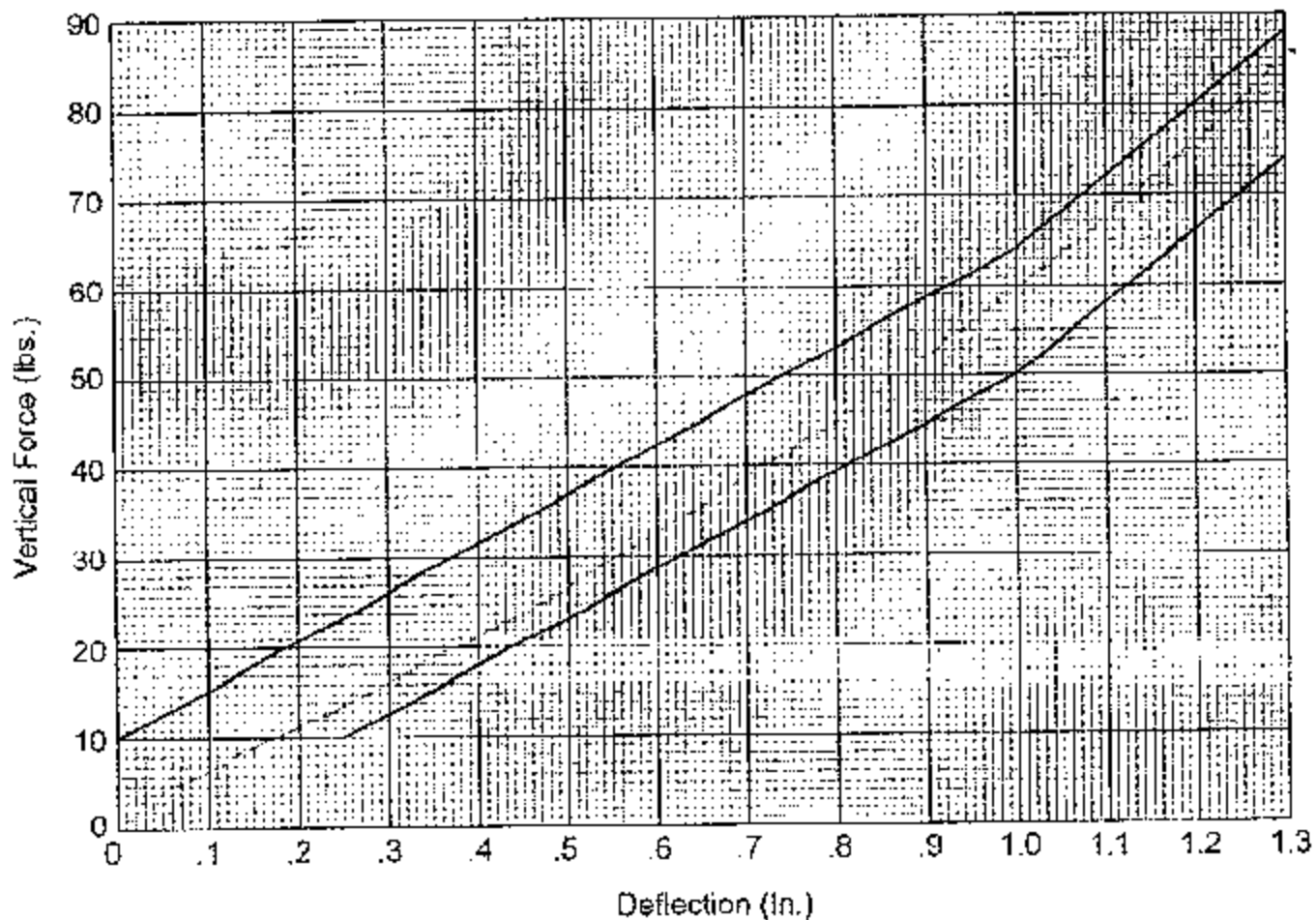
W/A _____

Date 4-28-03

Performed By KE

Temp. 70°

Humidity 35%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
POST TEST
(Test not required for SID certification)

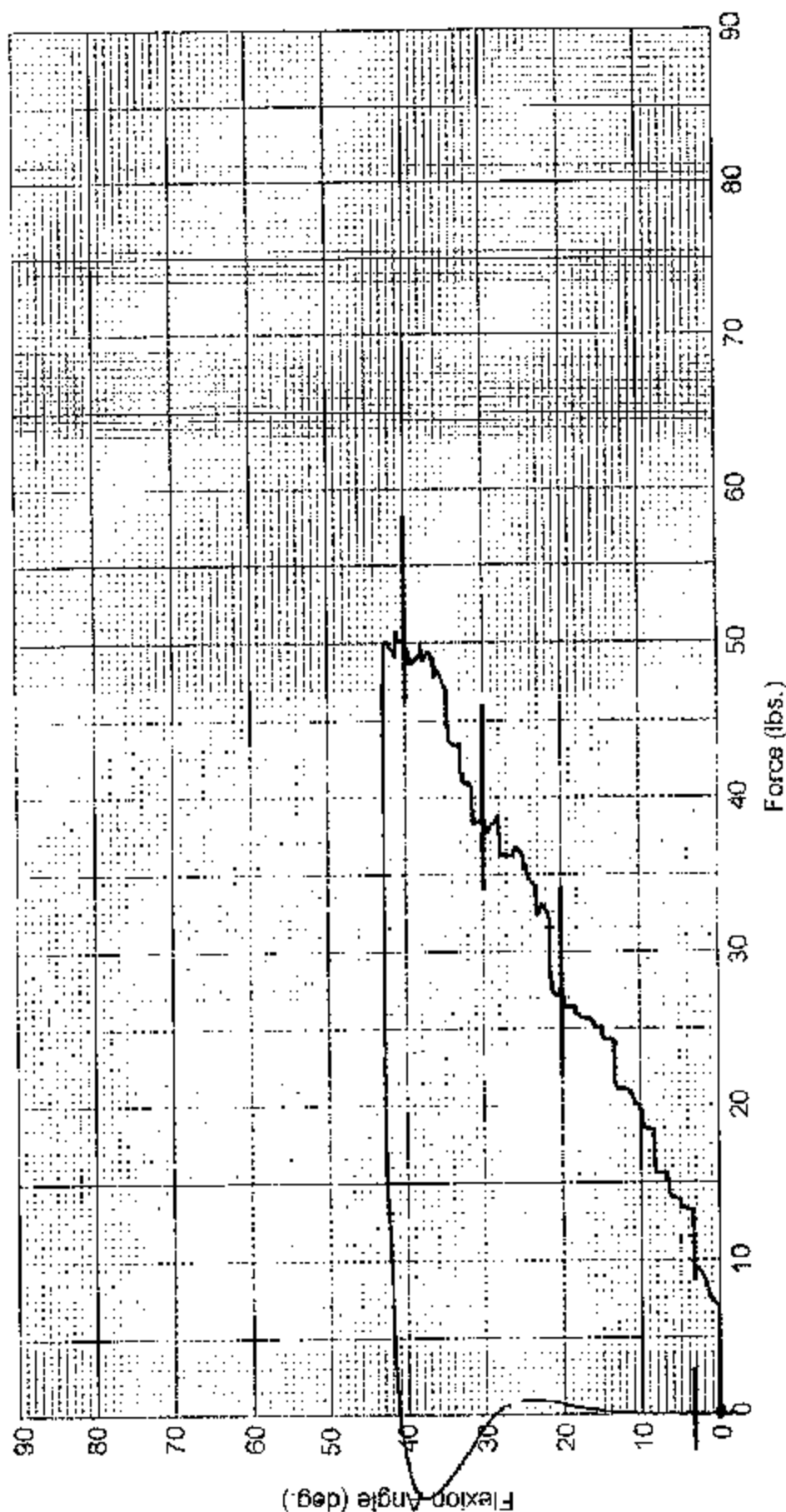
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015 Sequential Test Number: 1
Date: April 28, 2003 Laboratory Technician: B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|-----------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 35.0 |
| FORCE @ 0° (N) | 0 - 26.7 | 0.2 |
| FORCE @ 20° (N) | 97.8 - 151.2 | 121.0 |
| FORCE @ 30° (N) | 151.2 - 204.6 | 169.0 |
| FORCE @ 40° (N) | 204.6 - 258 | 222.0 |
| RETURN ANGLE | 12° max. | 3.3° |

REMARKS: None

Dummy S/N 015
 W/A
 Date 4-28-03
 Performed By [Signature]
 Temp. 70°
 Humidity 35%



Hybrid II Lumbar Spine Flexion Test

POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 015

Sequential Test Number:

1

Date: April 28, 2003

Laboratory Technician:

B. Swiecki

| PART | ITEMS CHECKED | COMMENTS |
|--------------|---|----------|
| SKIN | VISUAL INSPECTION | OK |
| HEAD | VISUAL, BALLAST, ACCELEROMETER MOUNT | OK |
| NECK | VISUAL, CABLE TORQUE | OK |
| SPINE BOX | VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT | OK |
| RIB CAGE | VISUAL, MEASURE, STIFFENERS | OK |
| STERNUM | VISUAL | OK |
| LUMBAR SPINE | VISUAL | OK |
| ABDOMEN | VISUAL | OK |
| PELVIS | VISUAL, PALPATE, ACCELEROMETER MOUNT | OK |
| UPPER LEGS | VISUAL | OK |
| KNEES | VISUAL, STOPS, INSERTS | OK |
| LOWER LEGS | VISUAL, RANGE OF MOTION | OK |
| ANKLES | VISUAL, RANGE OF MOTION | OK |
| FEET | VISUAL, RANGE OF MOTION | OK |
| JOINTS | 1 TO 2 g RANGE | OK |
| OTHER | NONE | |

REMARKS: None

CALIBRATION TEST RESULTS

POST TEST

SID H3 NO.: 016

CONFIGURED FOR LEFT SIDE IMPACT

**CALIBRATION TEST RESULTS SUMMARY
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: I
Date: April 28, 2003 Laboratory Technician: B. Swiecicki

| TEST | COMMENTS |
|-----------------------------|--------------------------|
| EXTERNAL DIMENSIONS | Passed all requirements. |
| LATERAL THORAX IMPACT TEST | Passed all requirements. |
| LATERAL PELVIS IMPACT TEST | Passed all requirements. |
| HEAD DROP TEST* | Passed all requirements. |
| LATERAL NECK BEND TEST* | Passed all requirements. |
| ABDOMINAL COMPRESSION TEST* | Passed all requirements. |
| LUMBAR FLEXION TEST* | Passed all requirements. |

* Test not required for SID certification.

REMARKS: None

**EXTERNAL DIMENSIONS
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 1
 Date: April 28, 2003 Laboratory Technician: B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|------------------------------------|---------------|--------------|
| SH- Seated Height (mm) | 880 - 909 | 902 |
| RH- Rib Height (mm) | 502 - 520 | 513 |
| HP- Hip Pivot Height (mm) | 99 ref. | 99 |
| RD- Rib from Back Line (mm) | 229 - 241 | 239 |
| KH- Knee Pivot from Back Line (mm) | 511 - 526 | 521 |
| KV- Knee Pivot to Floor (mm) | 490 - 505 | 495 |
| HW- Hip Width (mm) | 356 - 391 | 371 |

REMARKS: None

LATERAL THORAX IMPACT TEST
POST TEST

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016

Sequential Test Number:

1

Date: April 28, 2003

Laboratory Technician:

B. Swicicki

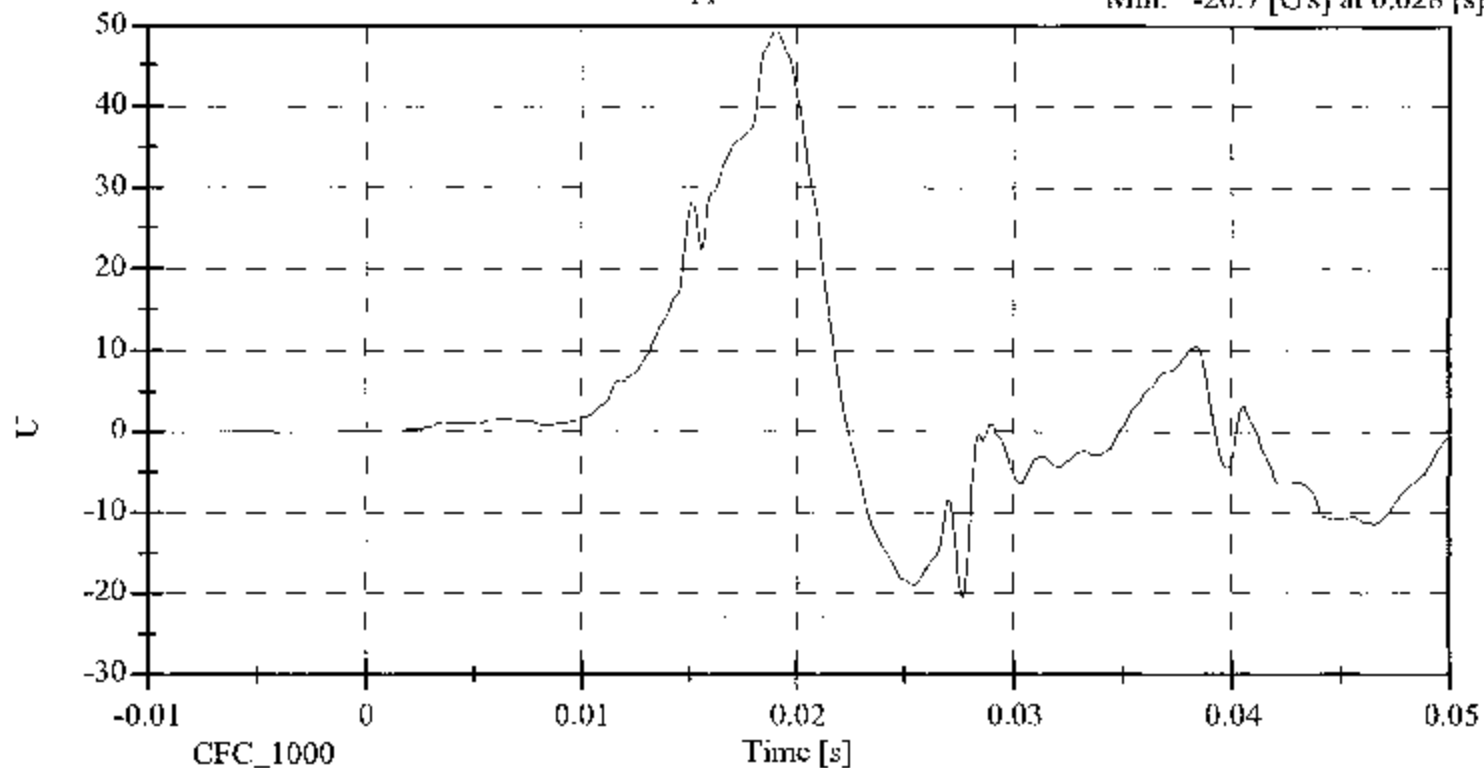
| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|-----------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 31.0 |
| PROBE SPEED (m/s) | 4.27 - 4.33 | 4.27 |
| UPPER RIB (g's) | 37 - 46 | 44.48 |
| LOWER RIB (g's) | 37 - 46 | 38.86 |
| LOWER SPINE (g's) | 15 - 22 | 21.43 |

REMARKS: None

Upper Rib Y Acceleration

Max: 49.4 [G's] at 0.019 [s]

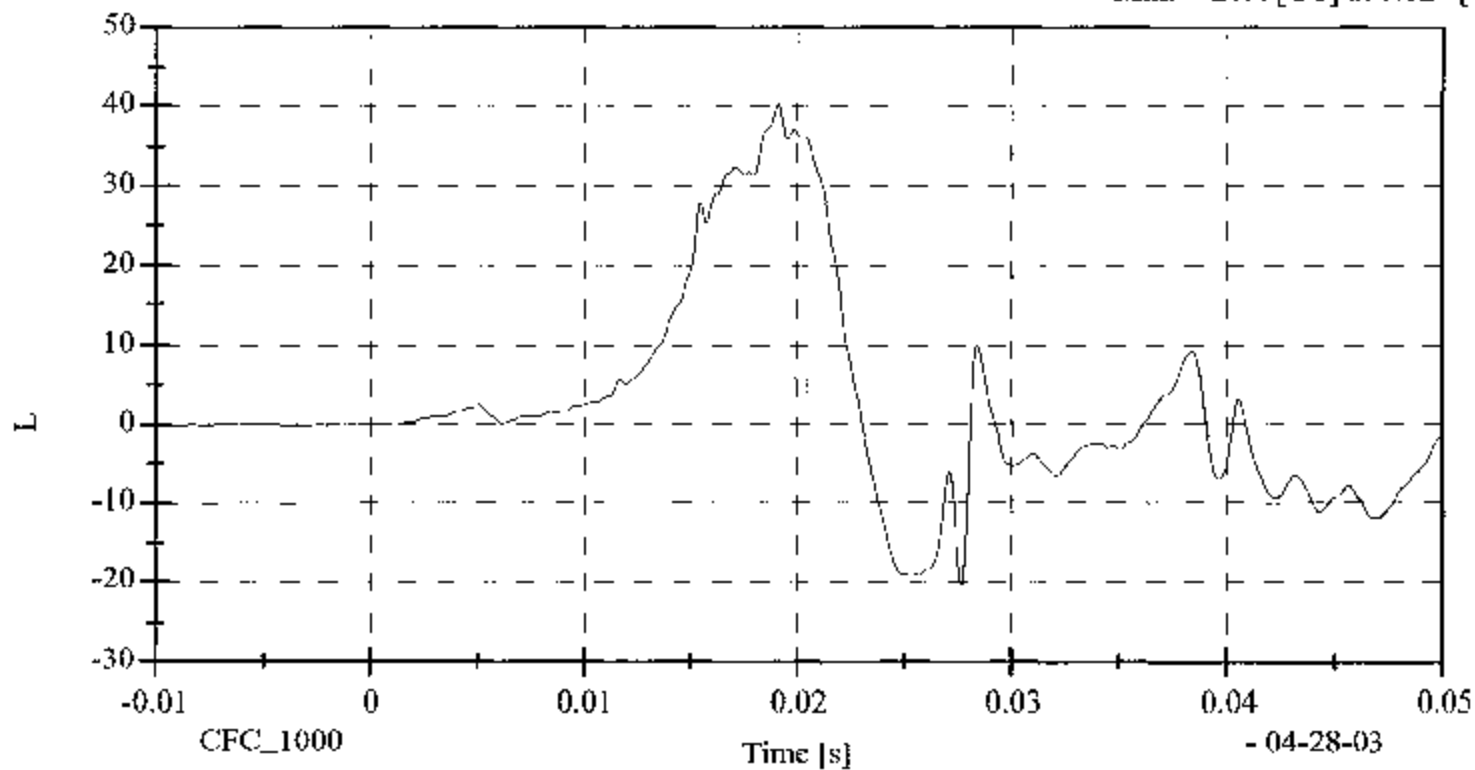
Min: -20.7 [G's] at 0.028 [s]

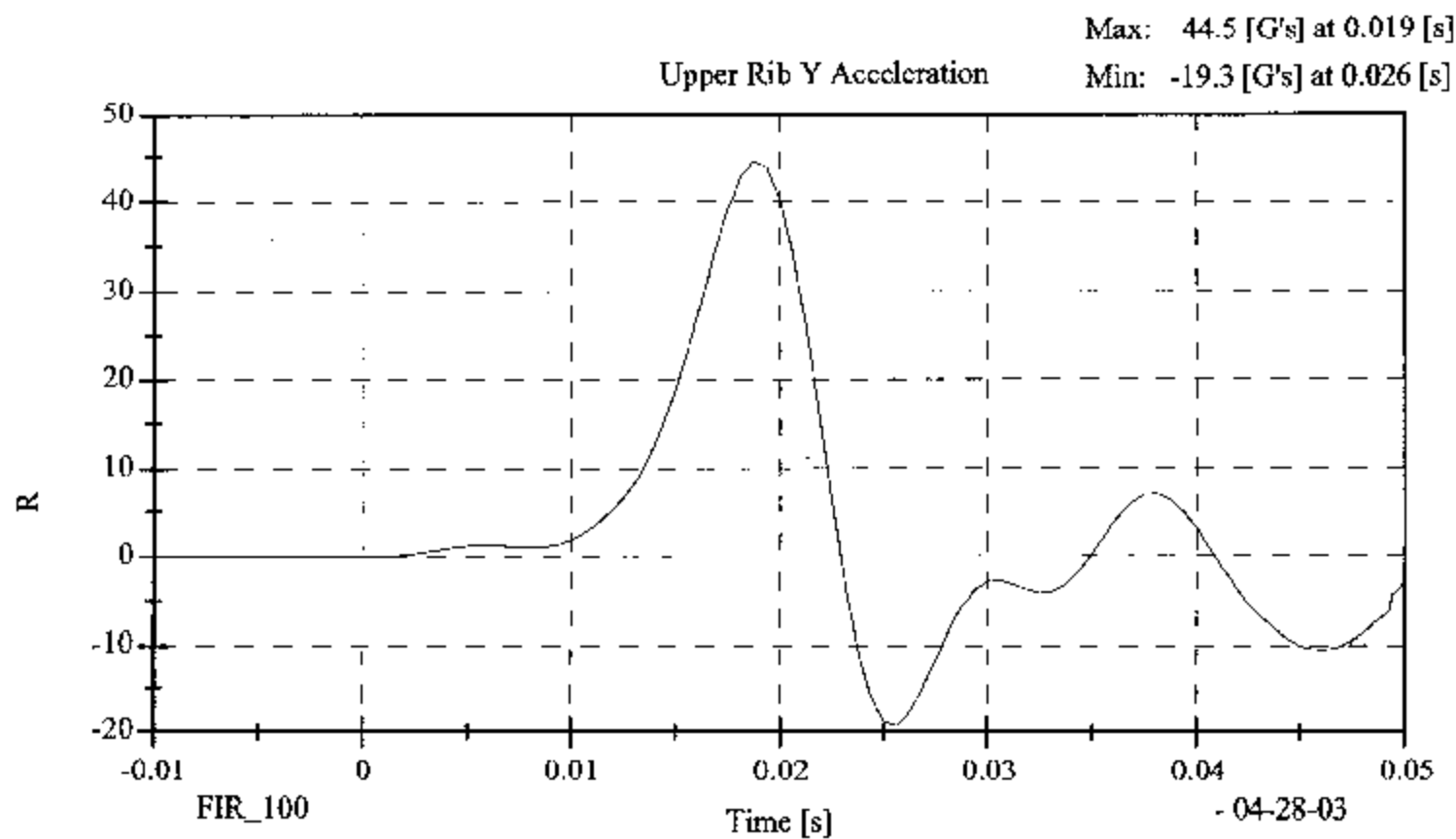
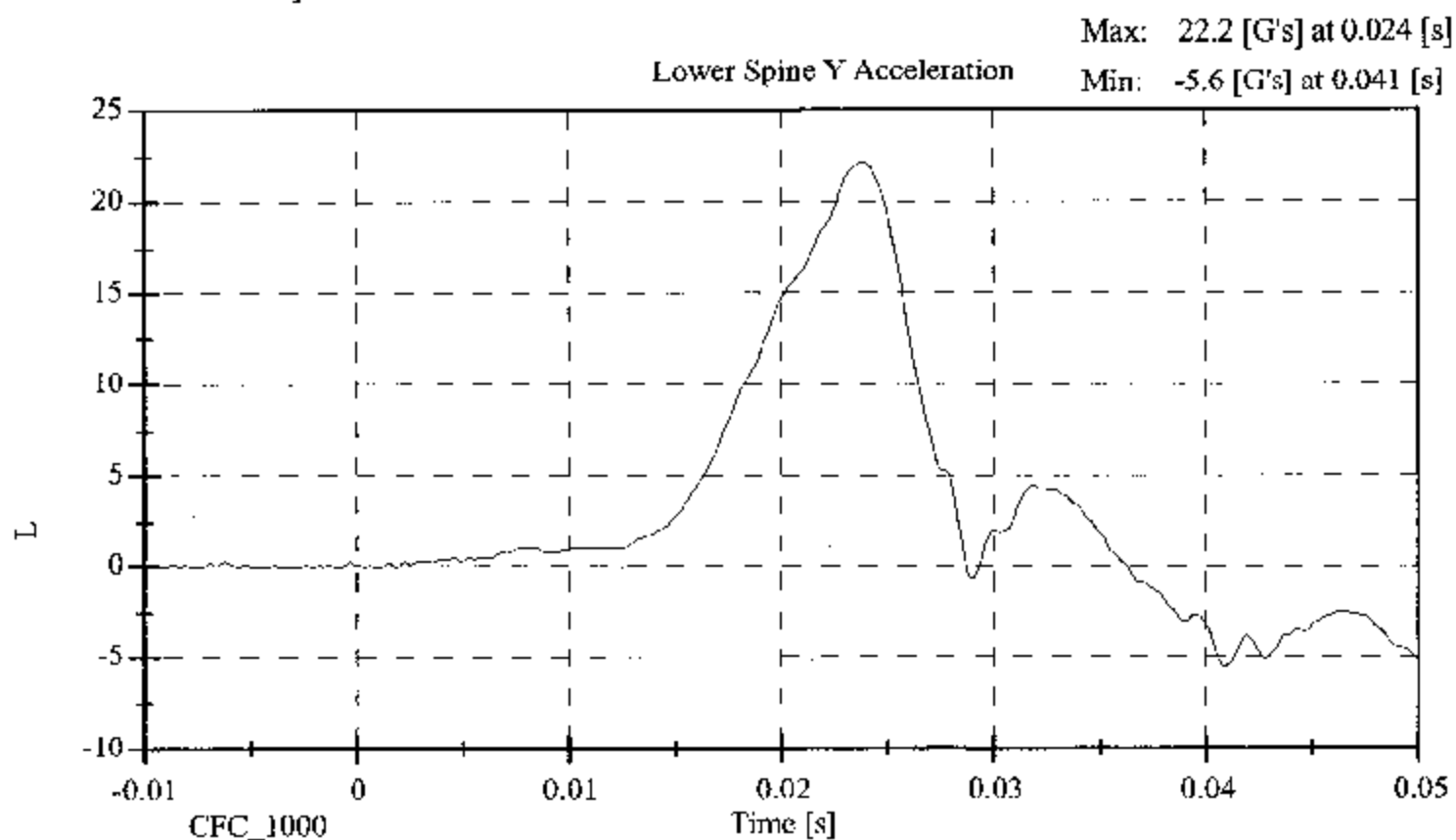


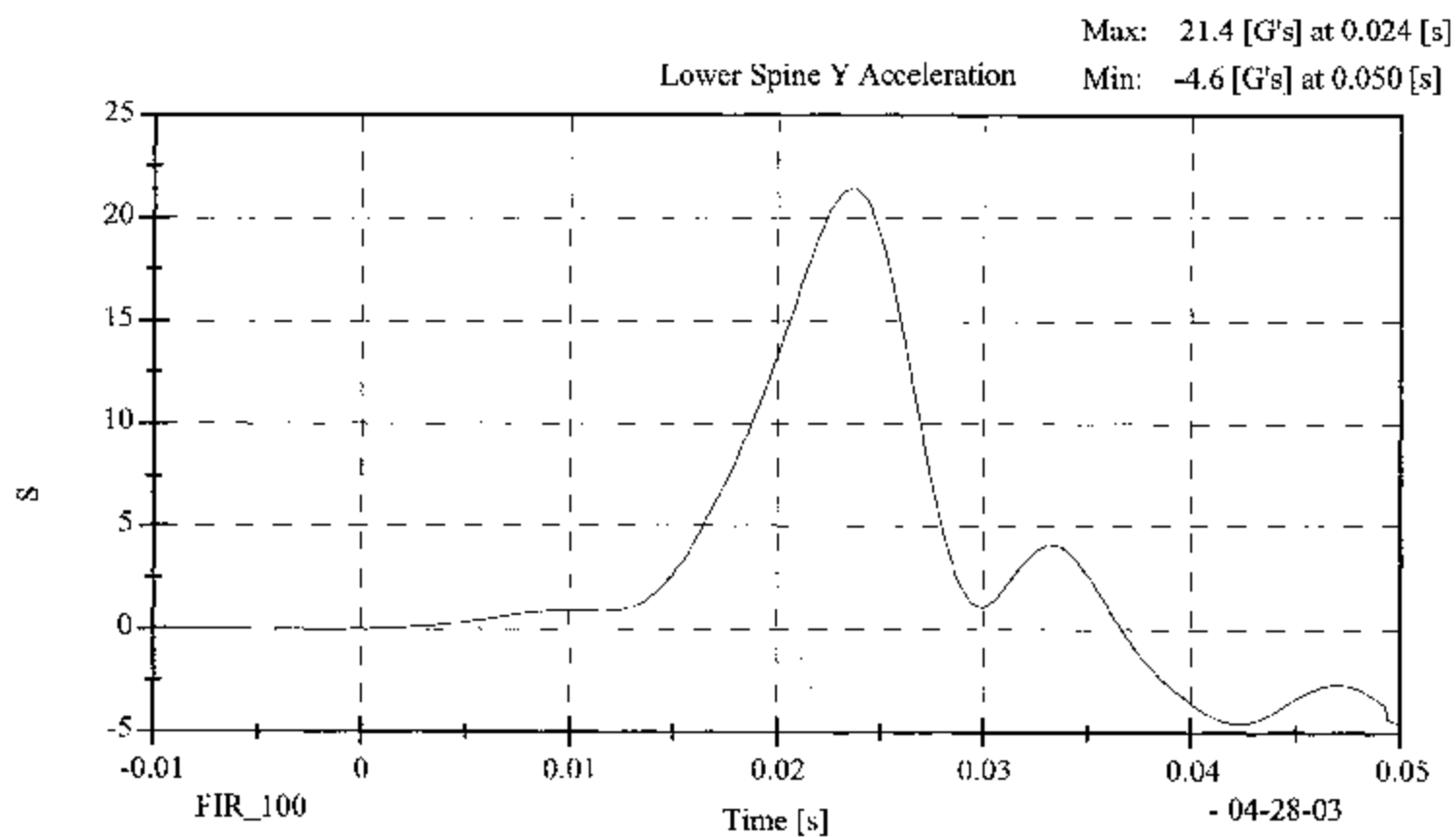
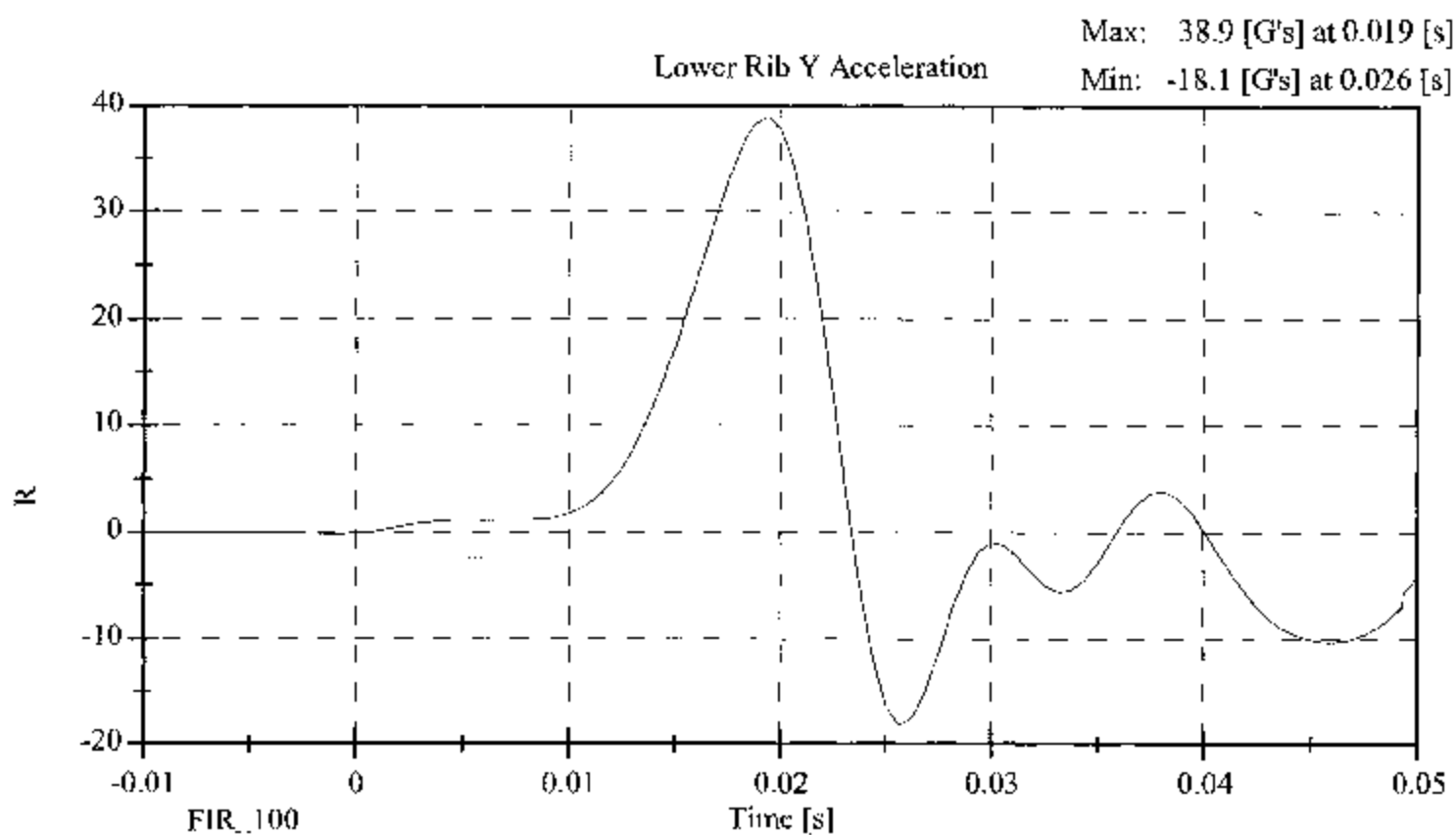
Lower Rib Y Acceleration

Max: 40.2 [G's] at 0.019 [s]

Min: -20.4 [G's] at 0.028 [s]







**LATERAL PELVIS IMPACT TEST
POST TEST**

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016

Sequential Test Number:

1

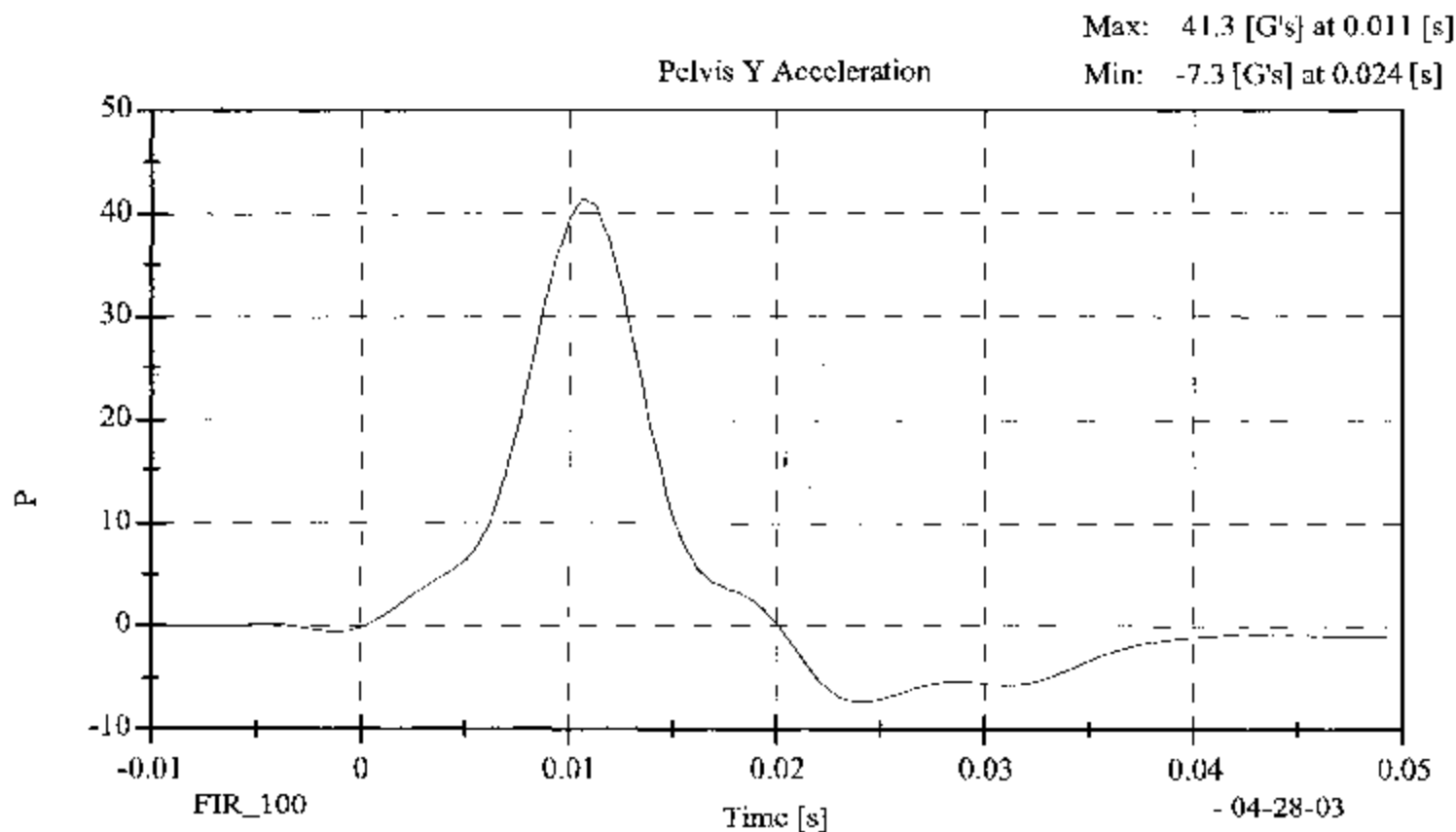
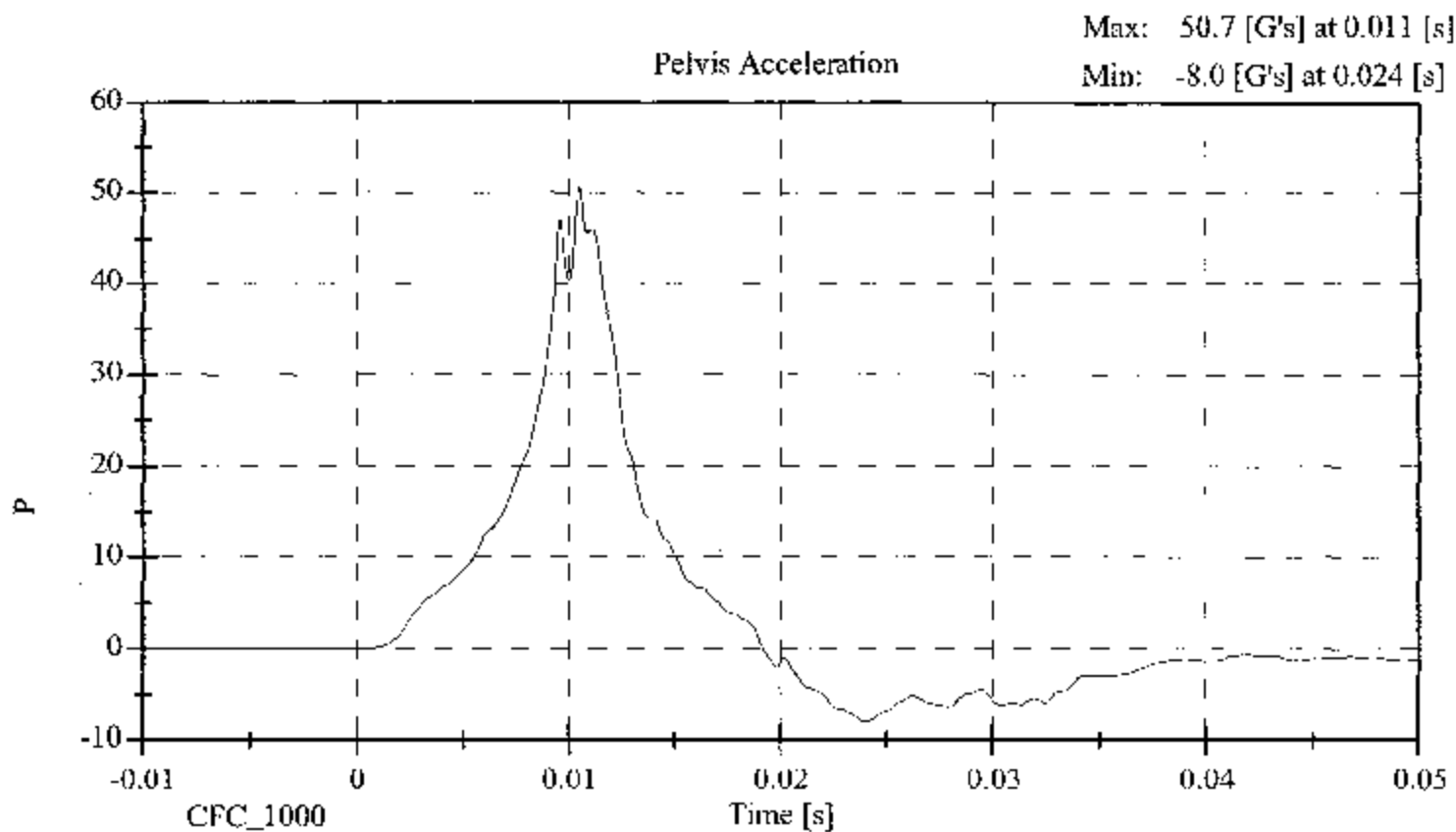
Date: April 28, 2003

Laboratory Technician:

H. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|---------------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 31.0 |
| PROBE SPEED (m/s) | 4.27 - 4.33 | 4.30 |
| PELVIS ACCELERATION (g's) | 40 - 60 | 41.28 |

REMARKS: None



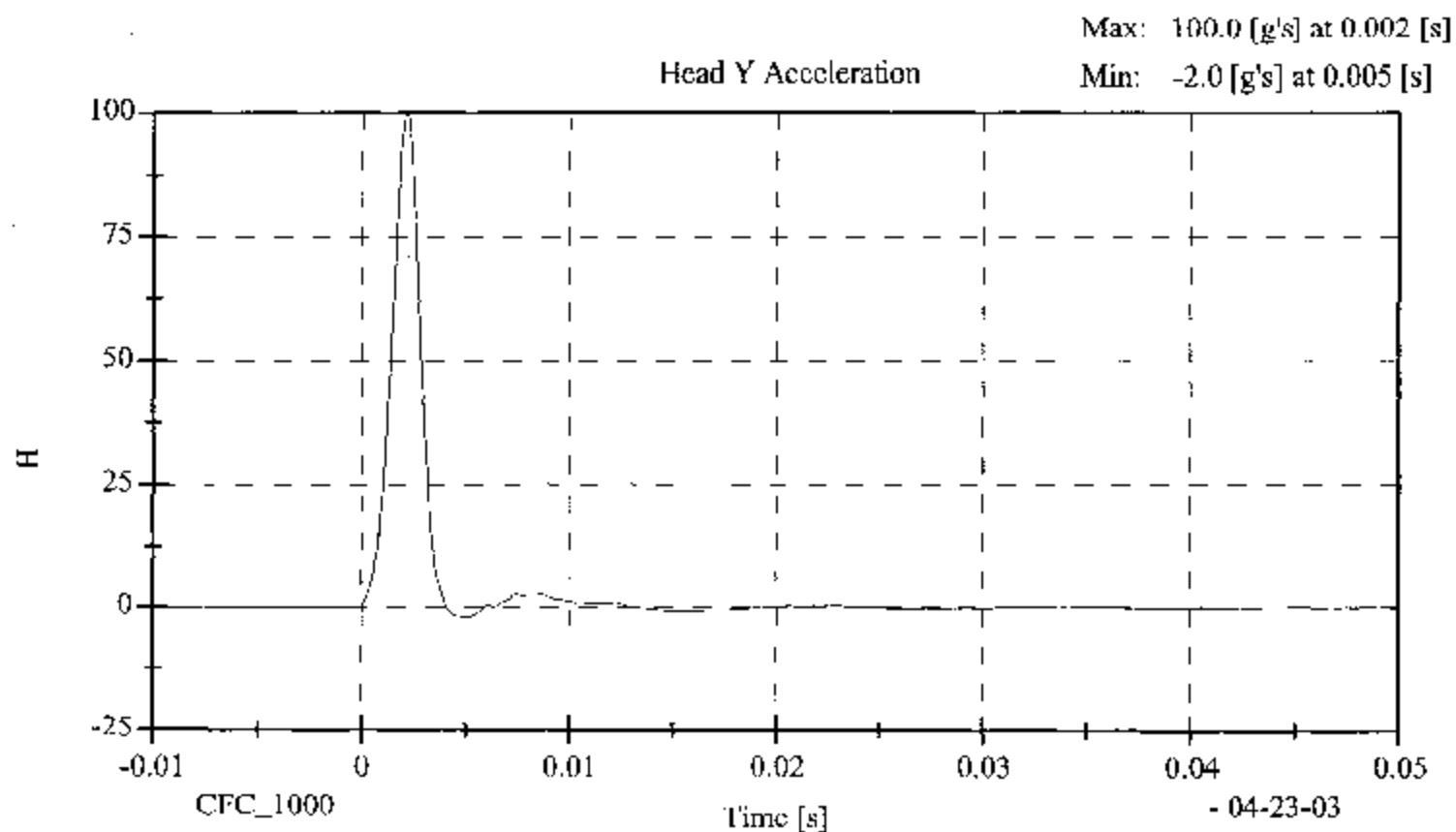
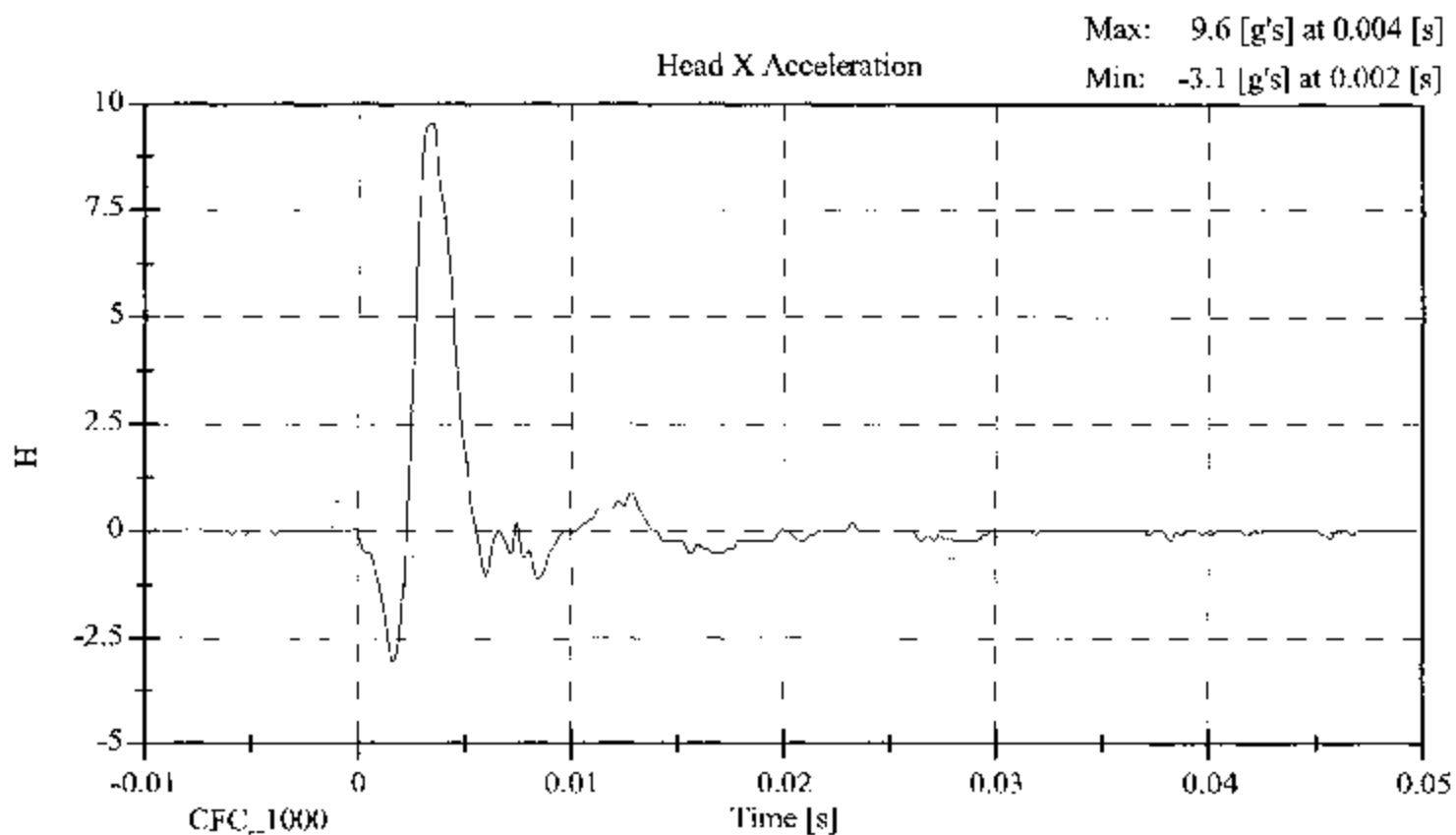
HEAD DROP TEST
POST-TEST
(Test not required for SID certification)

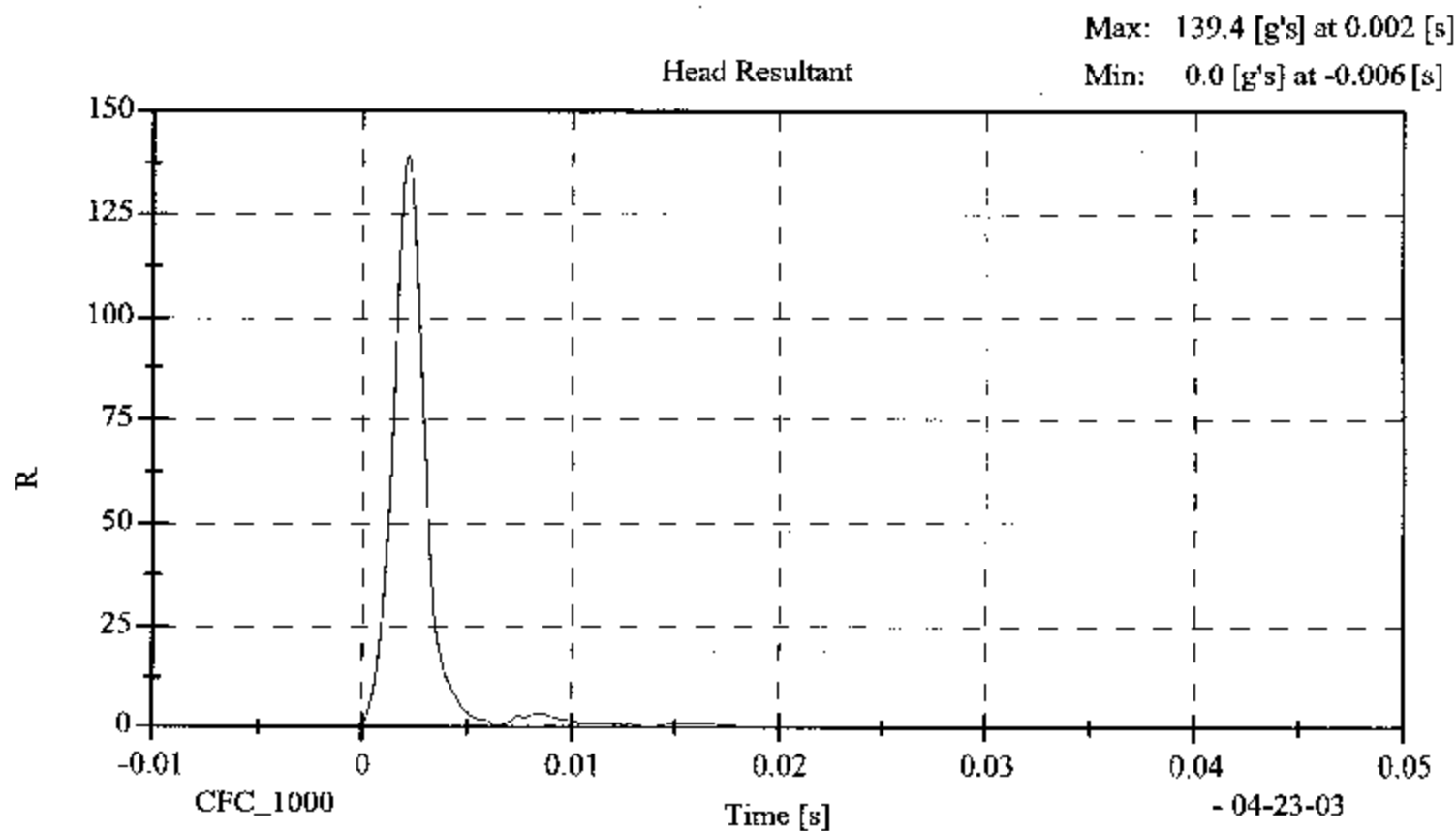
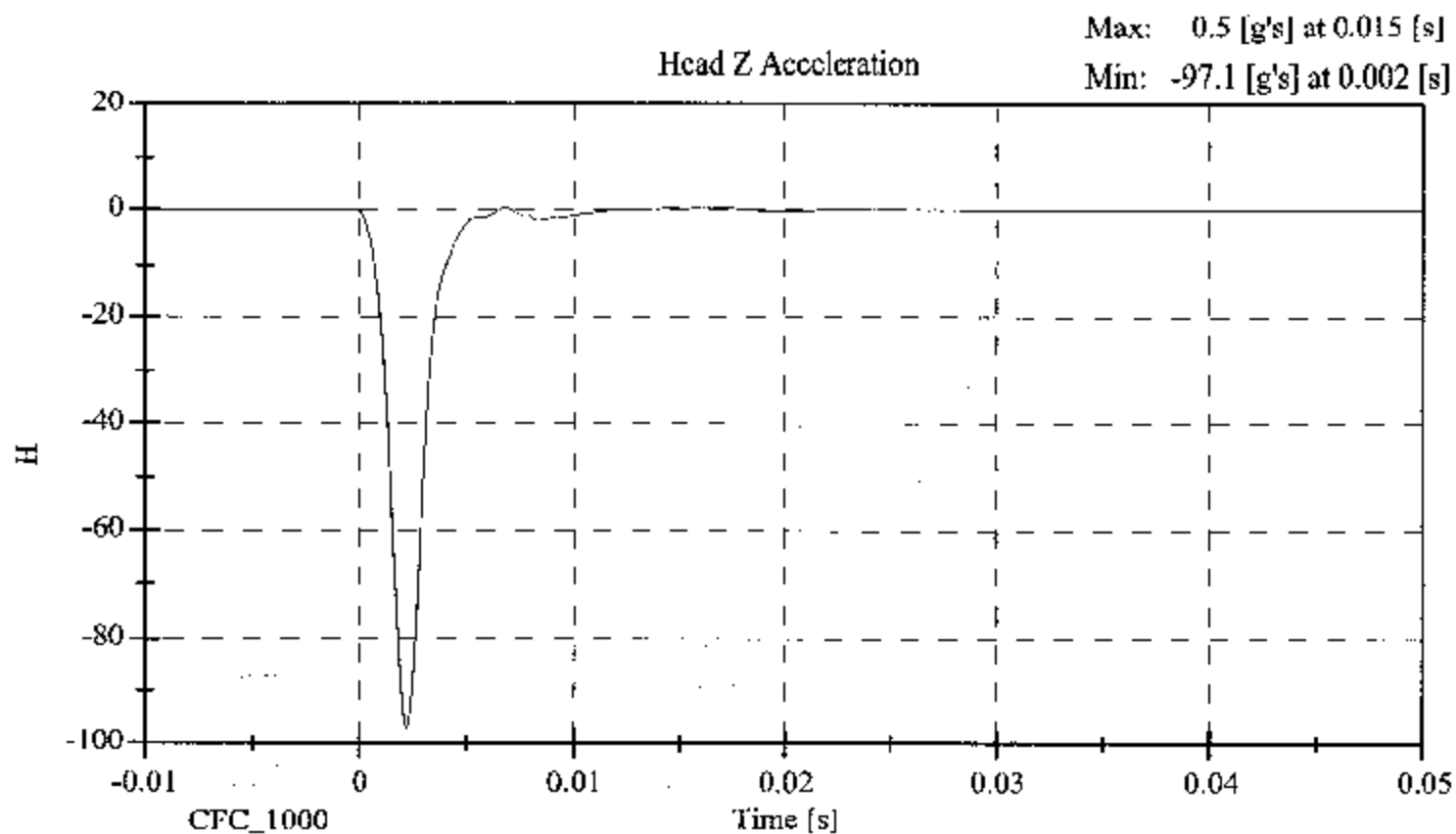
CONFIGURED FOR LEFT SIDE IMPACT

SID Serial No.: 016 Sequential Test Number: 1
Date: April 23, 2003 Laboratory Technician: B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|----------------------------------|------------------|--------------|
| TEMPERATURE (°C) | 20.6 – 22.2 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 – 70 | 38.0 |
| PEAK RESULTANT ACCELERATION (Gs) | 120 – 150 | 139.37 |
| PEAK LATERAL ACCELERATION (Gs) | Not to Exceed 15 | 9.55 |
| CURVE PERCENT NONMODAL (%) | < 15 | 2.46 |

REMARKS: None





**LATERAL NECK BENDING TEST
POST-TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

| | | |
|----------------------|-------------------------------------|--|
| SID Serial No.: 016 | Sequential Test Number: 1 | |
| Date: April 24, 2003 | Laboratory Technician: B. Swiecicki | |

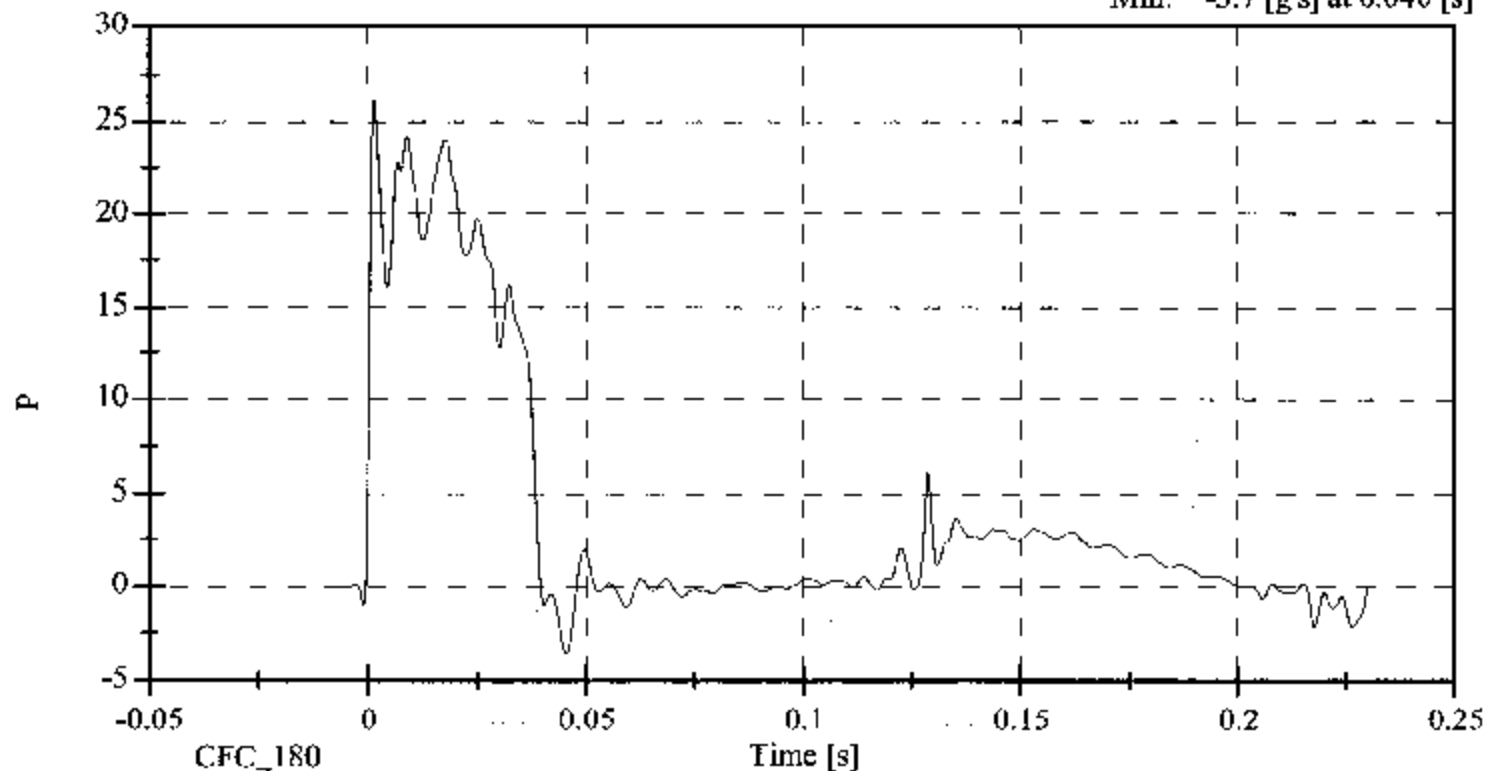
| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|---|---------------|--------------|
| TEMPERATURE (°C) | 20.6 - 22.2 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 33.0 |
| IMPACT VELOCITY (m/s) | 6.89 - 7.13 | 6.93 |
| PENDULUM DELTA V | | |
| DELTA V @ 10 ms (m/s) | 1.96 - 2.55 | 2.04 |
| DELTA V @ 20 ms (m/s) | 4.12 - 5.10 | 4.15 |
| DELTA V @ 30 ms (m/s) | 5.73 - 7.01 | 5.90 |
| DELTA V @ 40-70 ms (m/s) | 6.27 - 7.64 | 7.00 |
| D PLANE ROTATION | | |
| MAXIMUM ROTATION (deg) | 64 - 78 | 72.51 |
| ROT. ANGLE TIME to ZERO (ms) | 50 - 70 | 60.80 |
| MOMENT ABOUT THE OCCIPITAL CONDYLE | | |
| MAX OCCIPITAL MOMENT (Nm) | 88 - 108 | 90.22 |
| OCCIPITAL MOMENT DECAY (ms) | 40.0 - 60.0 | 51.50 |
| HEAD ROTATION TIME WITH RESPECT TO THE OCCIPITAL CONDYLE MOMENT | | |
| ROTATION wrt MOMENT (ms) | 0 - 20 | 10.10 |

REMARKS: None

Pendulum Acceleration

Max: 26.1 [g's] at 0.002 [s]

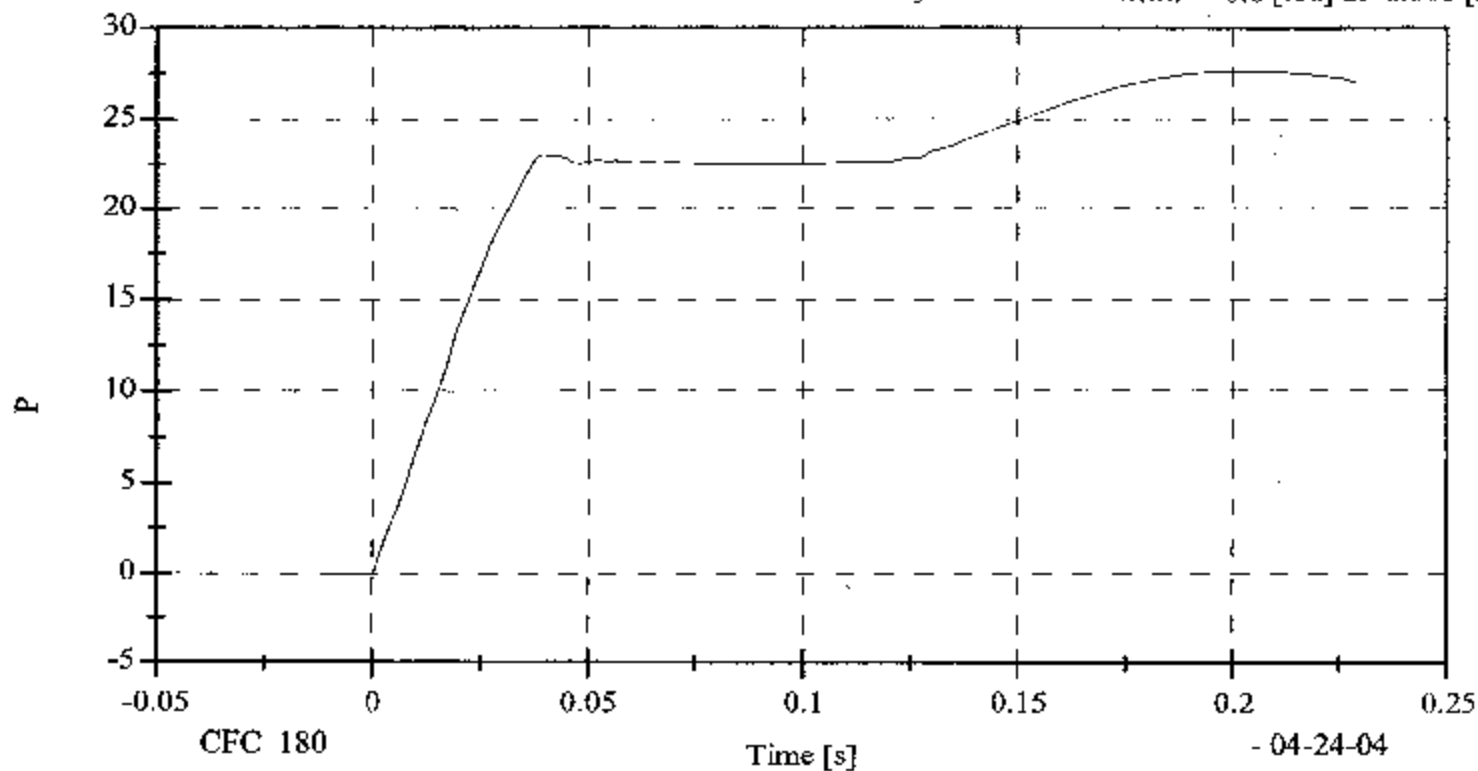
Min: -3.7 [g's] at 0.046 [s]

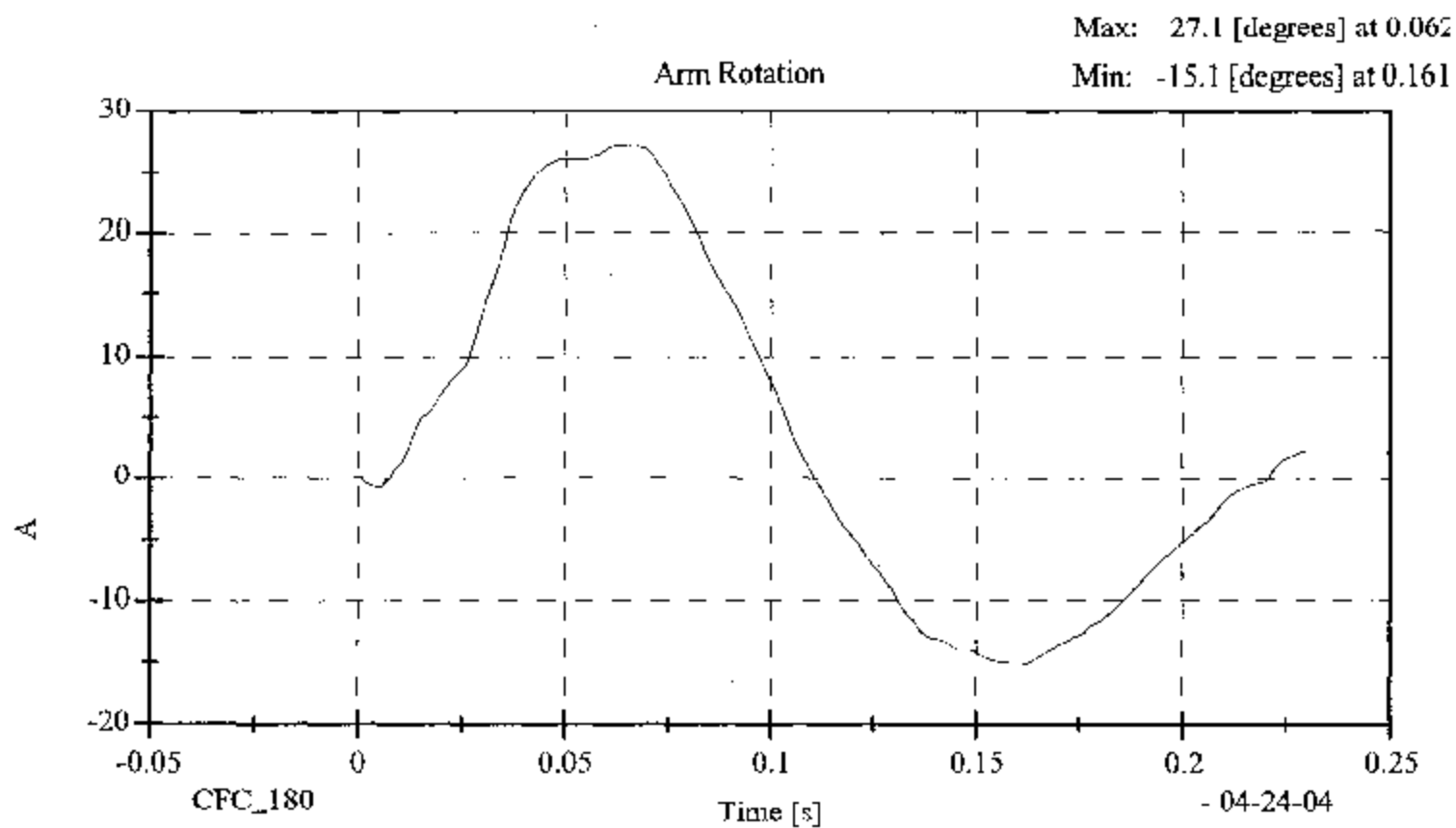
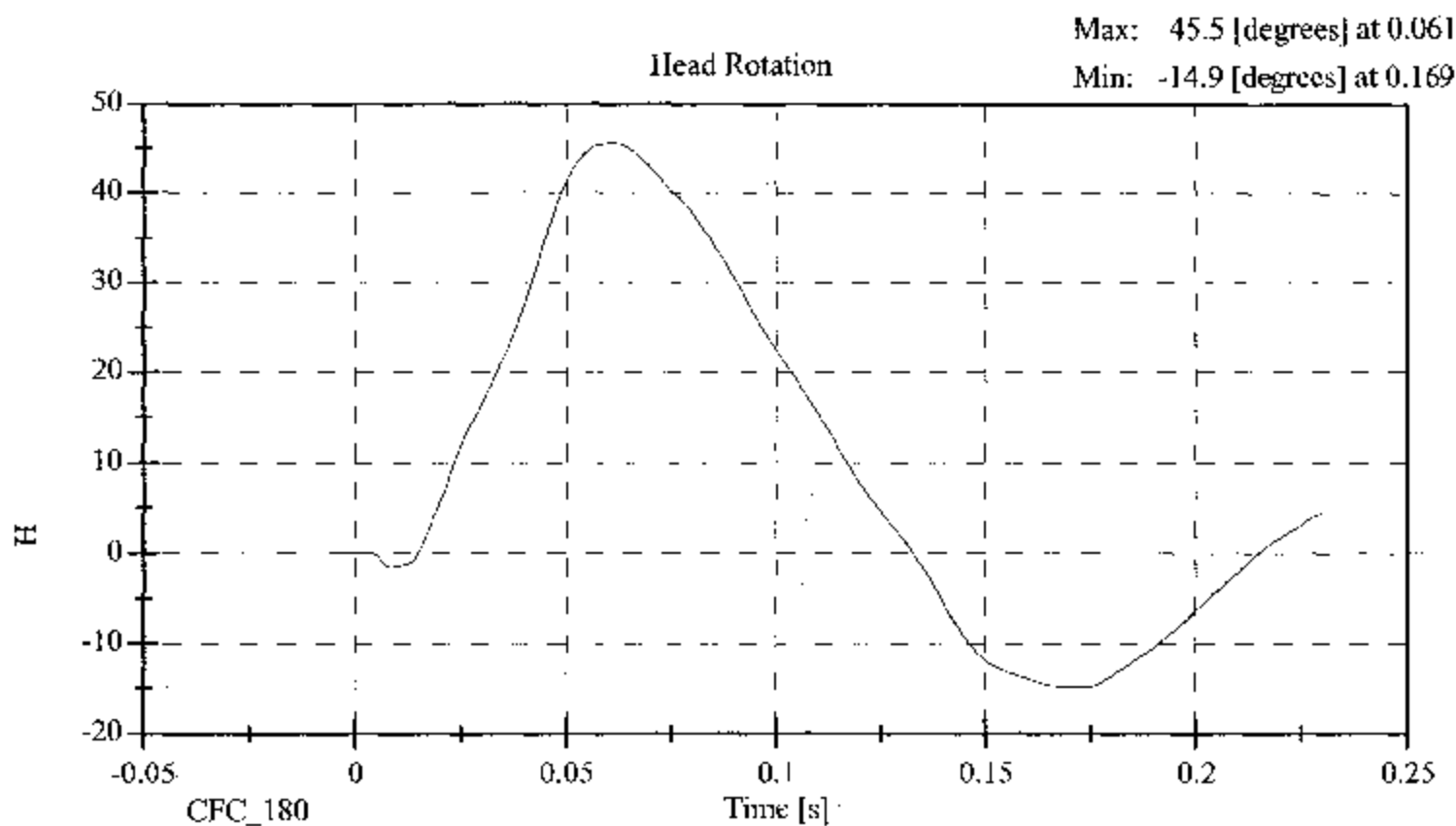


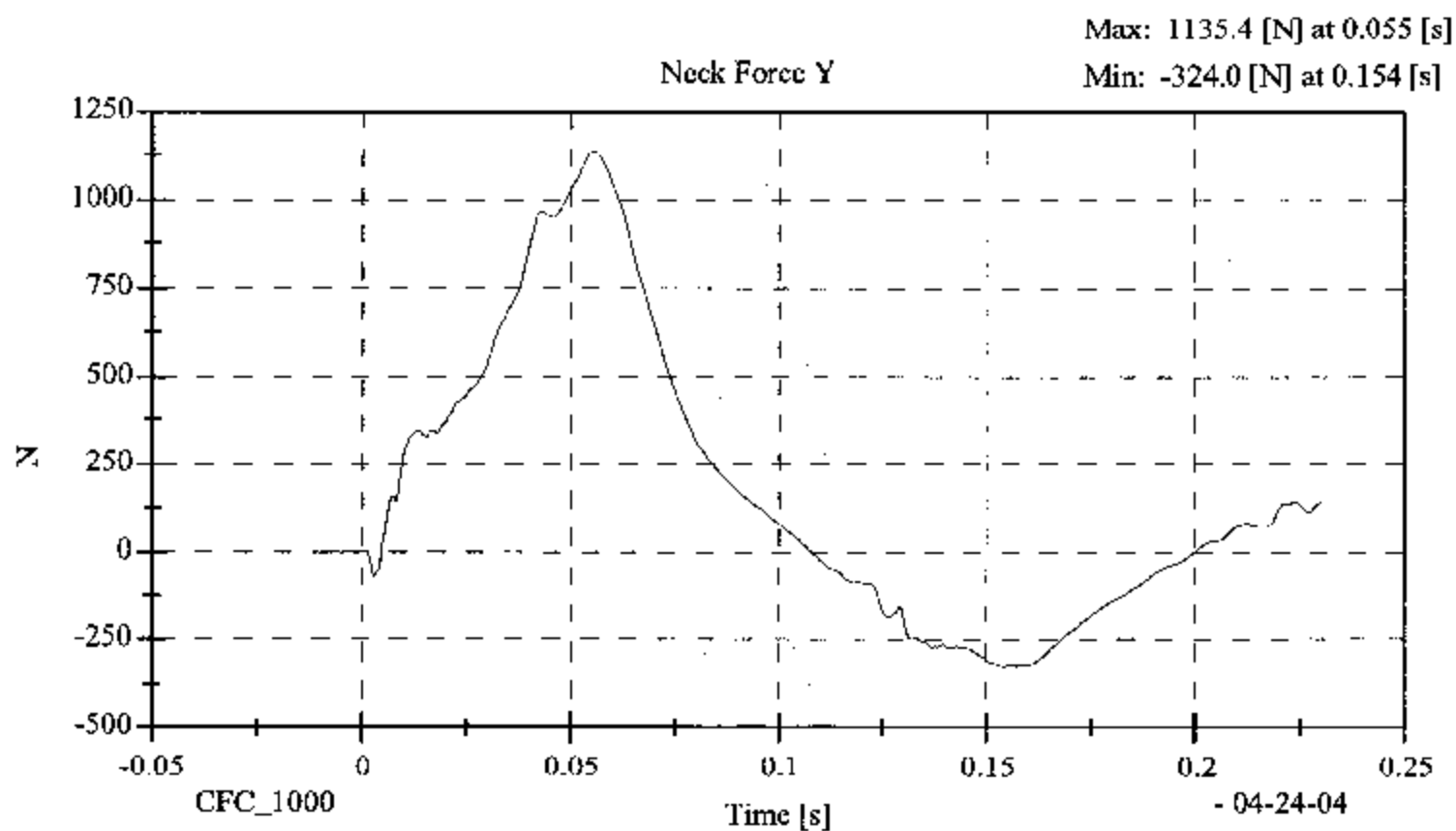
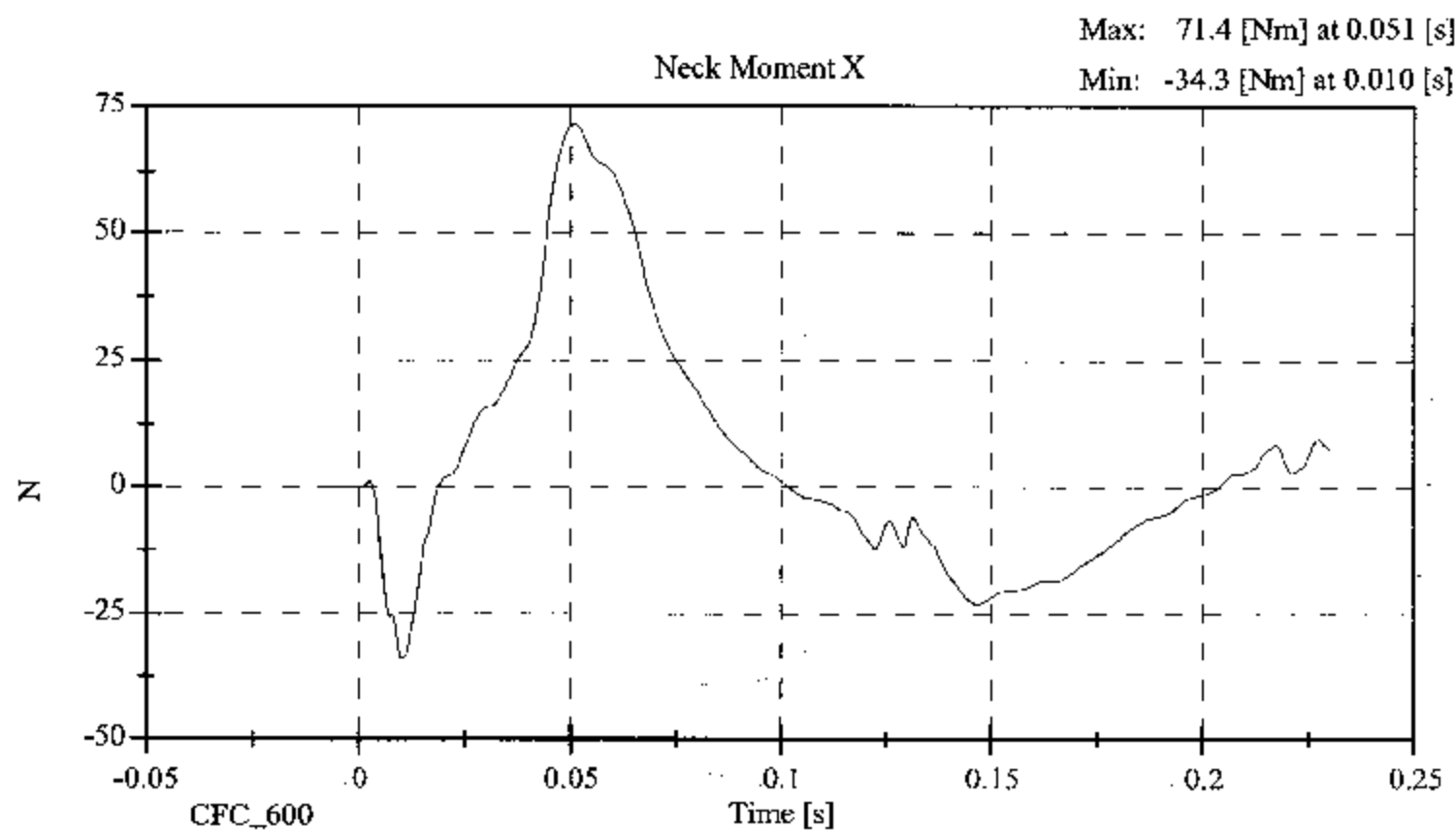
Pendulum Velocity

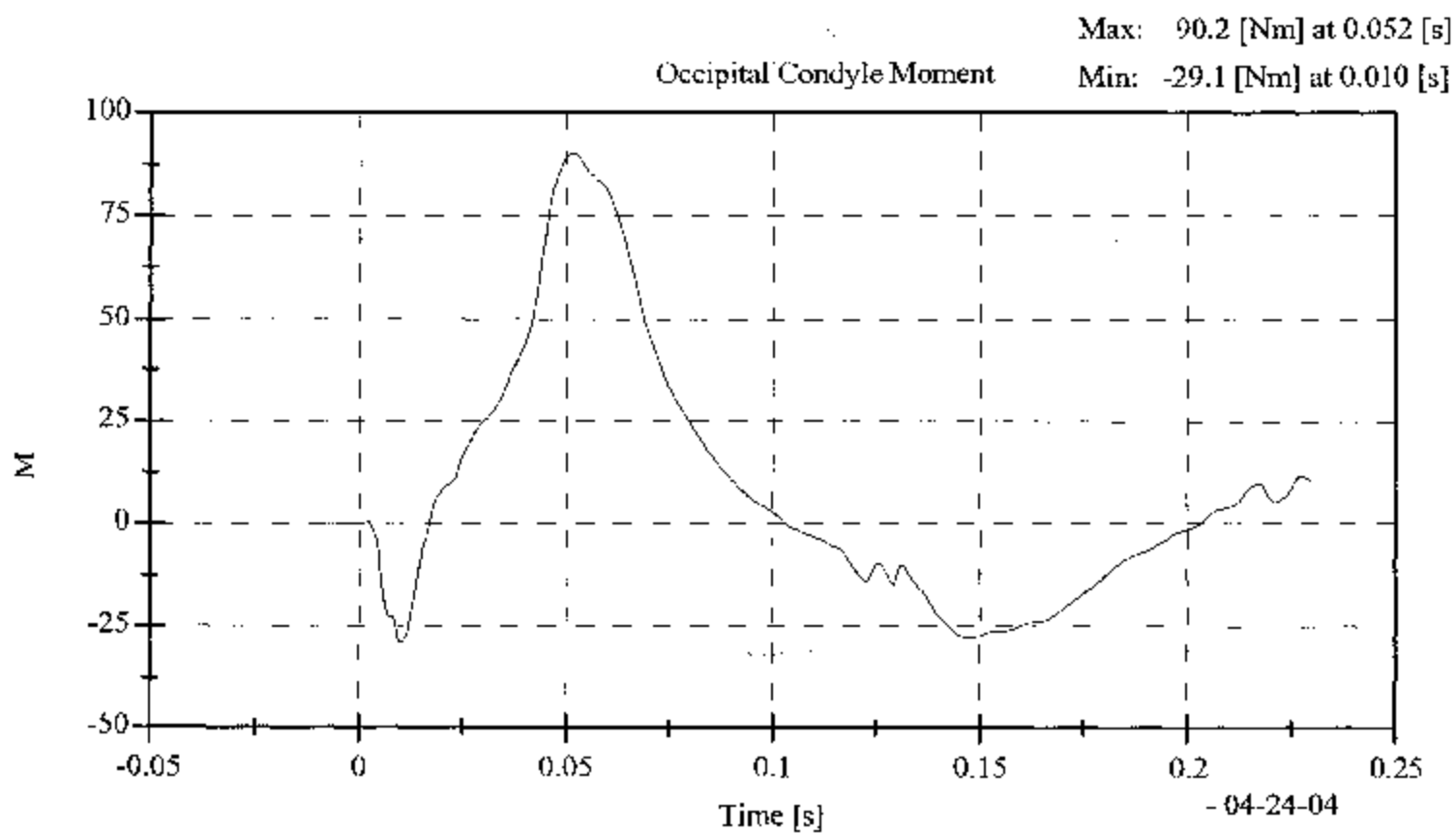
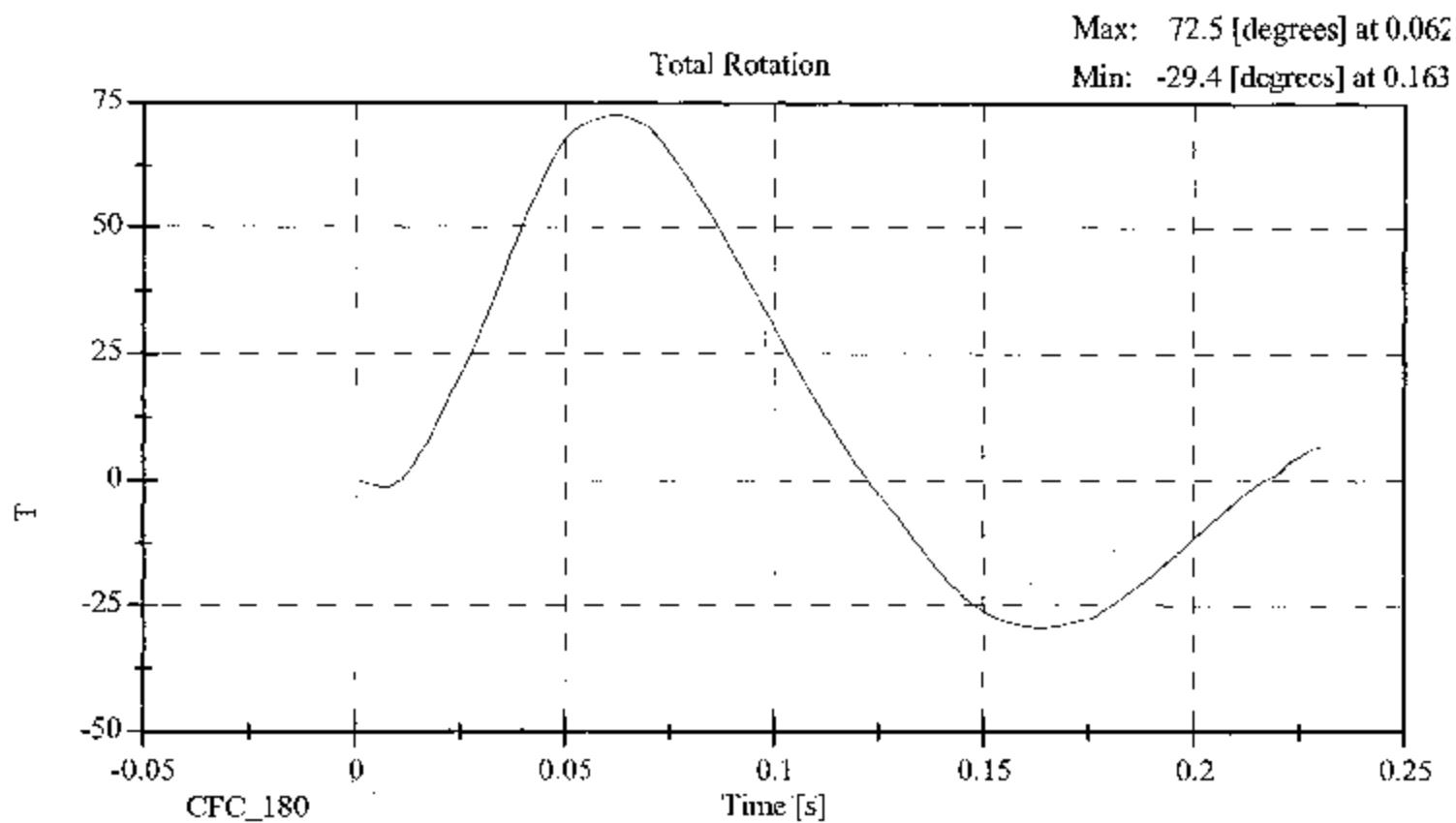
Max: 27.6 [ft/s] at 0.203 [s]

Min: -0.0 [ft/s] at -0.001 [s]









**ABDOMINAL COMPRESSION TEST
POST TEST**

(Test not required for SID certification)

CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016

Sequential Test Number:

1

Date: April 28, 2003

Laboratory Technician:

B. Swiecicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|-----------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 35.0 |
| FORCE @ 13 mm (N) | 104 - 162 | 120.1 |
| FORCE @ 19 mm (N) | 163 - 221 | 187.7 |
| FORCE @ 25 mm (N) | 222 - 280 | 266.0 |
| FORCE @ 33 mm (N) | 325 - 391 | 379.4 |

REMARKS: None

Dummy S/N 016

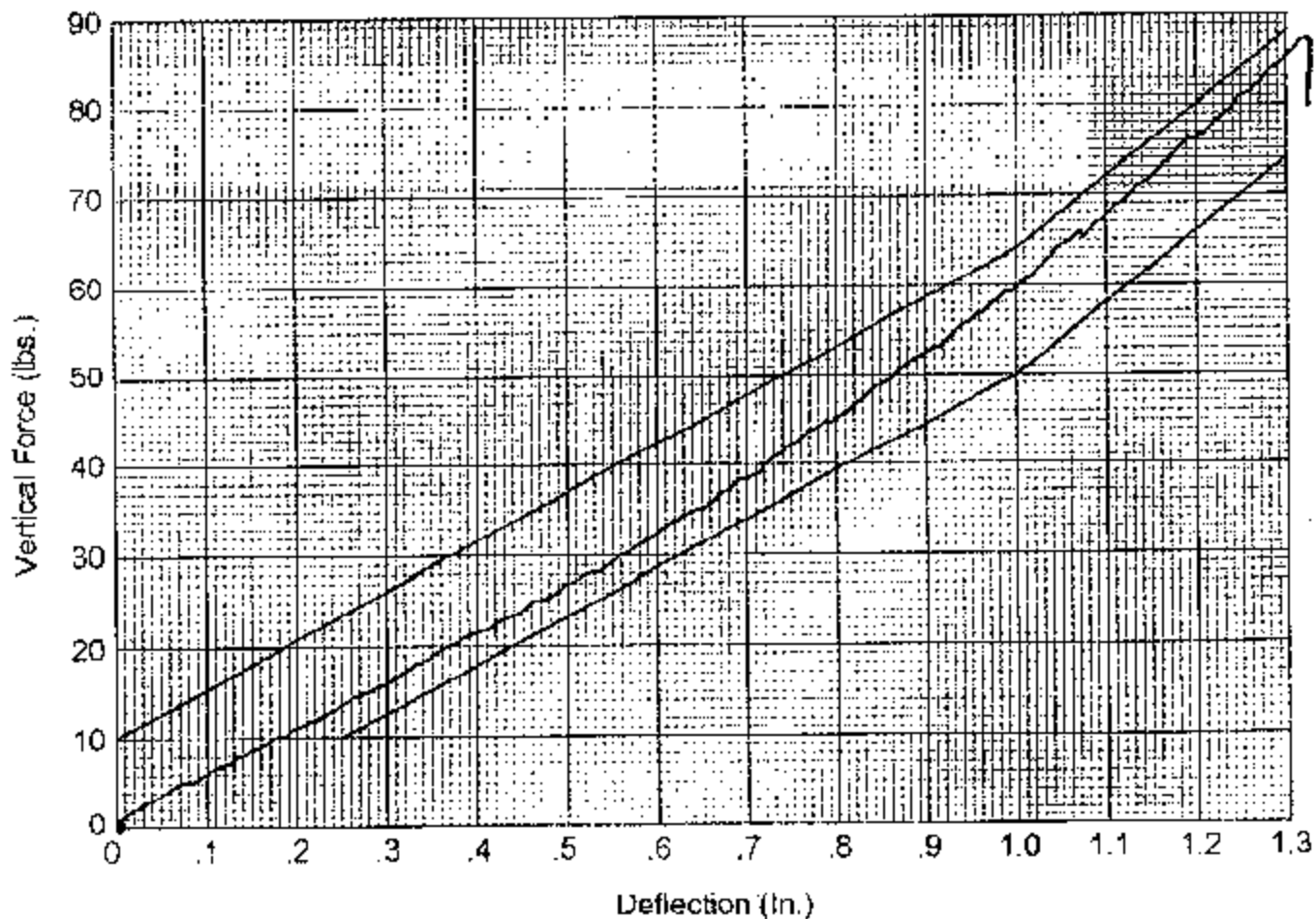
W/A

Date 4-28-03

Performed By [Signature]

Temp. 70

Humidity 35%



Hybrid II
Abdomen Static Press

LUMBAR FLEXION TEST
POST TEST
(Test not required for SID certification)

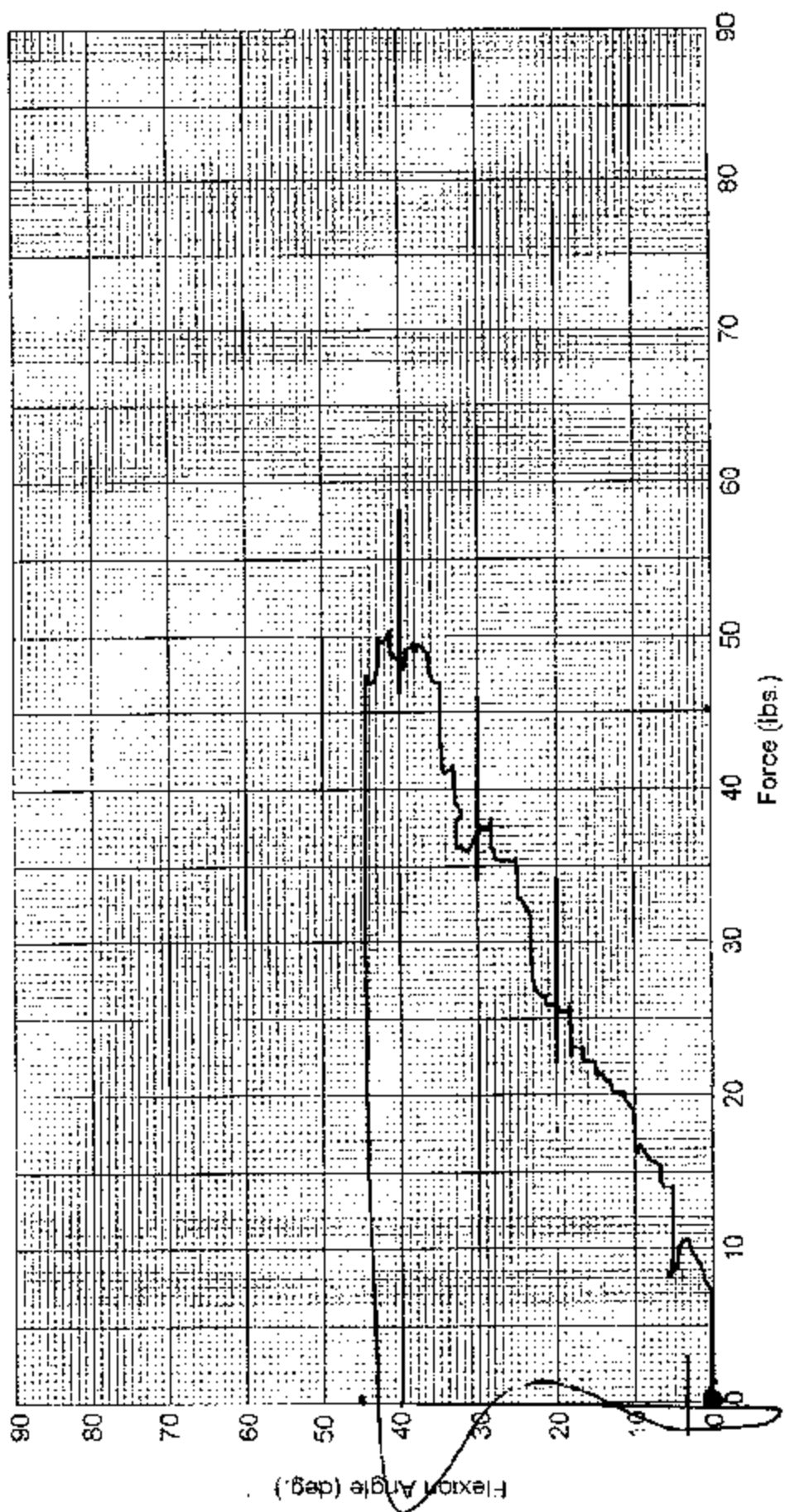
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016 Sequential Test Number: 1
Date: April 28, 2003 Laboratory Technician: B. Swieczicki

| TEST PARAMETER | SPECIFICATION | TEST RESULTS |
|-----------------------|---------------|--------------|
| TEMPERATURE (°C) | 18.9 - 25.5 | 21.1 |
| RELATIVE HUMIDITY (%) | 10 - 70 | 35.0 |
| FORCE @ 0° (N) | 0 - 26.7 | 0.2 |
| FORCE @ 20° (N) | 97.8 - 151.2 | 114.8 |
| FORCE @ 30° (N) | 151.2 - 204.6 | 164.6 |
| FORCE @ 40° (N) | 204.6 - 258 | 210.2 |
| RETURN ANGLE | 12° max. | 3.4° |

REMARKS: None

Dummy S/N 016
 WIA _____
 Date 4-28-03
 Performed By [Signature]
 Temp. 70°
 Humidity 55%



Hybrid II Lumbar Spine Flexion Test

POST TEST DUMMY INSPECTION LIST
CONFIGURED FOR LEFT SIDE IMPACT

SID H3 Serial No.: 016

Sequential Test Number: 1

Date: April 28, 2003

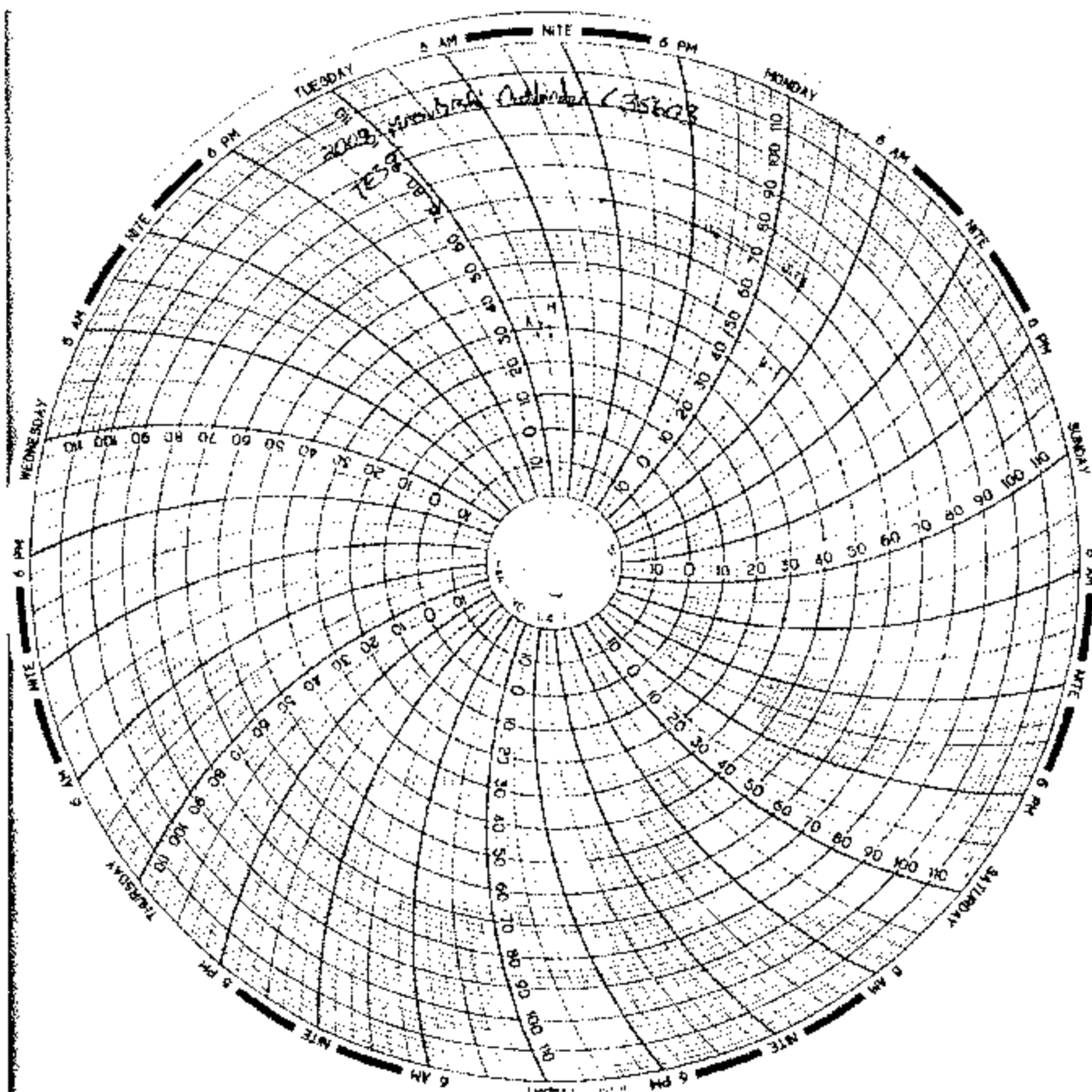
Laboratory Technician:

B. Swieczicki

| PART | ITEMS CHECKED | COMMENTS |
|--------------|---|----------|
| SKIN | VISUAL INSPECTION | OK |
| HEAD | VISUAL, BALLAST, ACCELEROMETER MOUNT | OK |
| NECK | VISUAL, CABLE TORQUE | OK |
| SPINE BOX | VISUAL, BALLAST, WELDMENT, ACCELEROMETER MOUNT | OK |
| RIB CAGE | VISUAL, MEASURE, STIFFENERS | OK |
| STERNUM | VISUAL | OK |
| LUMBAR SPINE | VISUAL | OK |
| ABDOMEN | VISUAL | OK |
| PELVIS | VISUAL, PALPATE, ACCELEROMETER MOUNT | OK |
| UPPER LEGS | VISUAL | OK |
| KNEES | VISUAL, STOPS, INSERTS | OK |
| LOWER LEGS | VISUAL, RANGE OF MOTION | OK |
| ANKLES | VISUAL, RANGE OF MOTION | OK |
| FEET | VISUAL, RANGE OF MOTION | OK |
| JOINTS | 1 TO 2 g RANGE | OK |
| OTHER | NONE | - |

REMARKS: None

TEMPERATURE TRACE



APPENDIX D

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

**TEST EQUIPMENT LIST AND CALIBRATION INFORMATION
SID INSTRUMENTATION**

| FRONT SID NO.: 015 | | | |
|-----------------------|-----------------|--------------|------------------|
| | SERIAL NUMBER | MANUFACTURER | CALIBRATION DATE |
| NAAH HEAD X ARM Y | AC-01G18-F06 | ENTRAN | 04/07/03 |
| NAAH HEAD X ARM Z | AC-01B00L13-F39 | ENTRAN | 04/07/03 |
| NAAH HEAD Y ARM X | AC-00L13-F14 | ENTRAN | 04/07/03 |
| NAAH HEAD Y ARM Z | AC-01G18-F16 | ENTRAN | 04/07/03 |
| NAAH HEAD Z ARM X | AC-01B00L13-F72 | ENTRAN | 04/07/03 |
| NAAH HEAD Z ARM Y | AC-01G18-F12 | ENTRAN | 04/07/03 |
| HEAD AX | AC-P23993 | ENDEVCO | 11/04/02 |
| HEAD AY | AC-P23939 | ENDEVCO | 11/04/02 |
| HEAD AZ | AC-P23999 | ENDEVCO | 11/04/02 |
| UPPER NECK FX | LC-260FX | DENTON | 11/12/02 |
| UPPER NECK FY | LC-260FY | DENTON | 11/12/02 |
| UPPER NECK FZ | LC-260FZ | DENTON | 11/12/02 |
| UPPER NECK MX | LC-260MX | DENTON | 11/12/02 |
| UPPER NECK MY | LC-260MY | DENTON | 11/12/02 |
| UPPER NECK MZ | LC-260MZ | DENTON | 11/12/02 |
| UPPER RIB | AC-P16862 | ENDEVCO | 02/18/03 |
| LOWER RIB | AC-P16656 | ENDEVCO | 02/18/03 |
| LOWER SPINE | AC-P16866 | ENDEVCO | 02/18/03 |
| PELVIS | AC-P16676 | ENDEVCO | 02/18/03 |
| UPPER RIB REDUNDANT | AC-P23156 | ENDEVCO | 02/18/03 |
| LOWER RIB REDUNDANT | AC-P16645 | ENDEVCO | 02/18/03 |
| LOWER SPINE REDUNDANT | AC-P16823 | ENDEVCO | 02/18/03 |
| PELVIS REDUNDANT | AC-P16843 | ENDEVCO | 02/18/03 |

| REAR SID NO.: 016 | | | |
|-----------------------|---------------|--------------|------------------|
| | SERIAL NUMBER | MANUFACTURER | CALIBRATION DATE |
| NAAH HEAD X ARM Y | AC-01G18-F08 | ENTRAN | 04/01/03 |
| NAAH HEAD X ARM Z | AC-00L20-A13 | ENTRAN | 04/01/03 |
| NAAH HEAD Y ARM X | AC-00L20-A08 | ENTRAN | 03/28/03 |
| NAAH HEAD Y ARM Z | AC-01G18-F13 | ENTRAN | 03/28/03 |
| NAAH HEAD Z ARM X | AC-01J02-F18 | ENTRAN | 03/28/03 |
| NAAH HEAD Z ARM Y | AC-01G25-N11 | ENTRAN | 03/28/03 |
| HEAD AX | AC-P23960 | ENDEVCO | 11/10/02 |
| HEAD AY | AC-P23940 | ENDEVCO | 11/09/02 |
| HEAD AZ | AC-P23899 | ENDEVCO | 11/10/02 |
| UPPER NECK FX | LC-261FX | DENTON | 11/12/02 |
| UPPER NECK FY | LC-261FY | DENTON | 11/12/02 |
| UPPER NECK FZ | LC-261FZ | DENTON | 11/12/02 |
| UPPER NECK MX | LC-261MX | DENTON | 11/12/02 |
| UPPER NECK MY | LC-261MY | DENTON | 11/12/02 |
| UPPER NECK MZ | LC-261MZ | DENTON | 11/12/02 |
| UPPER RIB | AC-P18524 | ENDEVCO | 02/17/03 |
| LOWER RIB | AC-P18533 | ENDEVCO | 02/17/03 |
| LOWER SPINE | AC-P18514 | ENDEVCO | 02/17/03 |
| PELVIS | AC-P18519 | ENDEVCO | 02/17/03 |
| UPPER RIB REDUNDANT | AC-P18528 | ENDEVCO | 02/17/03 |
| LOWER RIB REDUNDANT | AC-P18518 | ENDEVCO | 02/17/03 |
| LOWER SPINE REDUNDANT | AC-P18688 | ENDEVCO | 02/17/03 |
| PELVIS REDUNDANT | AC-P18531 | ENDEVCO | 02/17/03 |

REMARKS: None

TEST EQUIPMENT LIST AND CALIBRATION INFORMATION

VEHICLE AND MDB INSTRUMENTATION

| | VEHICLE AND MDB INSTRUMENTS | | |
|------------------------------------|-----------------------------|--------------|------------------|
| | SERIAL NUMBER | MANUFACTURER | CALIBRATION DATE |
| RIGHT FRONT SILL (X) | AC-B11408 | ENDEVCO | 02/10/03 |
| RIGHT FRONT SILL (Y) | AC-A13513 | ENDEVCO | 02/10/03 |
| RIGHT FRONT SILL (Z) | AC-B10827 | ENDEVCO | 02/10/03 |
| RIGHT REAR SILL (X) | AC-P19253 | ENDEVCO | 02/10/03 |
| RIGHT REAR SILL (Y) | AC-P23138 | ENDEVCO | 02/10/03 |
| RIGHT REAR SILL (Z) | AC-P21392 | ENDEVCO | 02/10/03 |
| REAR FLOORPAN ABOVE AXLE (X) | AC-J32174 | ENDEVCO | 01/21/03 |
| REAR FLOORPAN ABOVE AXLE (Y) | AC-J32838 | ENDEVCO | 01/21/03 |
| REAR FLOORPAN ABOVE AXLE (Z) | AC-J32143 | ENDEVCO | 01/21/03 |
| LEFT REAR SILL (Y) | AC-P18682 | ENDEVCO | 03/25/03 |
| LEFT FRONT SILL (Y) | AC-J31042 | ENDEVCO | 02/10/03 |
| LEFT FRONT DOOR CENTERLINE (Y) | - | - | - |
| RIGHT REAR SEAT OCCUPANT COMP. (Y) | AC-8084-014 | ICS | 11/20/02 |
| MID REAR OF LEFT FRONT DOOR (Y) | - | - | - |
| LEFT FRONT DOOR UPPER CL. (Y) | - | - | - |
| MID REAR OF LEFT REAR DOOR (Y) | - | - | - |
| LEFT REAR DOOR UPPER CL. (Y) | - | - | - |
| LOWER LEFT B-PILLAR (Y) | AC-P23976 | ENDEVCO | 04/16/03 |
| MIDDLE LEFT B-PILLAR (Y) | AC-P22943 | ENDEVCO | 01/21/03 |
| LOWER LEFT A-PILLAR (Y) | AC-J33198 | ENDEVCO | 04/16/03 |
| UPPER LEFT A-PILLAR (Y) | AC-P18948 | ENDEVCO | 01/21/03 |
| FRONT SEAT TRACK (Y) | AC-P23804 | ENDEVCO | 03/25/03 |
| REAR SEAT TRACK (Y) | AC-J33071 | ENDEVCO | 04/16/03 |
| VEHICLE CG (X) | AC-P17255 | ENDEVCO | 02/11/03 |
| VEHICLE CG (Y) | AC-P16813 | ENDEVCO | 02/11/03 |
| VEHICLE CG (Z) | AC-P17145 | ENDEVCO | 02/11/03 |
| MDB CG (X) | AC-C16433 | ENDEVCO | 04/17/03 |
| MDB CG (Y) | AC-C16416 | ENDEVCO | 04/17/03 |
| MDB CG (Z) | AC-C16499 | ENDEVCO | 04/17/03 |
| MDB REAR FRAME MEMBER (X) | AC-C14948 | ENDEVCO | 04/17/03 |
| MDB REAR FRAME MEMBER (Y) | AC-C16680 | ENDEVCO | 04/15/03 |

REMARKS: None